

**Student-Based Conceptualisations of  
University Brands:  
A Brand Loyalty Model.**

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## **STATEMENT OF DECLARATION**

I hereby certify that the work embodied in the thesis is my own work, conducted under normal supervision.

The thesis contains no material which has been accepted, or is being examined, for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968 and any approved embargo.

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Antonia Mocatta

July 1, 2018

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## **ABSTRACT**

The purpose of this exploratory study is to present an empirically tested customer-based brand equity framework for higher education institutions. Using an adapted service brand model, the framework addresses gaps in the higher education brand literature by incorporating a comprehensive inventory of brand attributes and dimensions, and by identifying their relative influence on student perceptions of university brands and the process by which brand loyalty is created as the ultimate expression of brand equity. The results are compared with other service sector studies on which the model is based.

The positivistic research involves the collection of quantitative survey data sampled from current, Australian university students. The partial least squares structural equation modelling (PLS-SEM) method is selected for its suitability for causal or structural equations where estimates of both the structural and measurement relations are required, and for complex hierarchical component models with two or more layers of formative and reflective constructs.

The study indicates that of the university brand attributes experienced by students, those most meaningful to them are employee service, followed by self-image congruence, feelings about the brand, and the core service. Whilst students' appraisal of controlled and uncontrolled university brand communications precedes and influences their subsequent assessment of the education service, it is their evaluation of those university brand attributes directly experienced during study that results in either satisfaction or dissatisfaction, determining their consequent brand attitude, and whether they are ultimately loyal towards the university brand.

The results suggest the model is applicable in the university context, and the process by which university brand loyalty is created is comparable to that of other services industries. A comparison of the current study results with those of earlier empirical studies using the same model in other industry settings, reveals variances that can be explained by industry context and the extent to which the service is experience and credence dominant.

By linking the higher education brand equity creation processes to that of other services, the findings contribute both to the higher education brand literature, and to services branding literature more broadly. From a managerial perspective, the scales and model provide a useful diagnostic tool for higher education brand managers to measure brand performance and make evidence-based decisions concerning brand strategy.

## **CHAPTER 1: INTRODUCTION**

### **1.1 Background to the Research**

The purpose of the current research is to present an empirically tested brand equity framework for higher education institutions. The theoretical model incorporates the range of hard and soft value-producing brand attributes and considers the process through which student exposure to university brands results in the ultimate expression of brand equity—brand loyalty. The model is operationalised via a set of scales that measures student responses to the dimensions and attributes of the higher education institution brand.

Over the past three decades the Australian higher education sector has been affected by factors that have resulted in increased competition among institutions for students. These include declining government funding, greater reliance on fee-paying international students, the growth of international student mobility and inter-market competition in student recruitment, and the rise of non-traditional entrants including private and online higher education providers. For example, the Australian Federal Government cut funding to Australian universities by \$3.9bn between 2011–2017 (Universities Australia, 2017), and extracted \$2.1bn from the higher education budget commencing in 2018 through a two-year cap on funded domestic student places and a freeze on the Commonwealth Grants Scheme to universities (Doran & Yaxley, 2017). This has resulted in universities facing shortfalls of up to 15 per cent of their core funding by 2021 (Universities Australia, 2018b). Australian universities continue to offset these deficits by competing globally for full fee-paying students, with institutions increasing their intake of the international cohort by 318 per cent between 2002–2018 (Department of Education and Training, 2018). While global student mobility has more than doubled from 2001–2017, and Australia's overall share of inbound international university students has increased from 4 per cent to 7 per cent over this period, market incumbents including the United States, United Kingdom and Australia, face increasing competition from more recently popular host nations including China, Canada and Russia (Institute of International Education, 2017). Australian universities additionally face increased competition for share of the domestic higher education student cohort from for-profit, private higher education providers, that have increased in number from 78 in 1999, to 105 in 2018, and have grown their enrolments by 540 per cent over that period to command an 8 per cent market share (Norton & Cherastidtham, 2018). Furthermore, universities relying on traditional models of face-to-face teaching and learning have seen enrolments of mature age and postgraduate students eroded by institutions offering correspondence and online education, with one-in-five domestic students now opting to study off-campus (Norton & Cherastidtham, 2018).

To counter these market pressures, many universities have introduced commercial brand and marketing practices (Mazzarol & Soutar, 1999) to promote a differentiated brand image, attract and retain students, and improve financial performance (Hemsley-Brown & Goonawardana, 2007; Melewar & Akel, 2005; Nguyen & LeBlanc, 2001; Williams Jr & Omar, 2014). Whilst there is growing evidence of private sector brand management practice within universities (Muntean, Cabuleaz, & Danuletiu, 2009; Waeraas & Solbaak, 2009), and administrators increasingly concur that brand management can benefit their institutions (Chapleo, 2007; Hemsley-Brown & Oplatka, 2006; Lowrie, 2007), there remains no clear agreement on a robust, empirically tested customer-based brand equity framework for the higher education sector. Furthermore, the adoption of a marketing orientation by universities has resulted in the recognition of students as consumers undertaking degrees with a view to career outcomes (Molesworth, Nixon, & Scullion, 2009). This commodification of education is frowned upon in academic circles in which ideals are held about the pursuit of knowledge being an end in and of itself (Jarvis, 2014).

## **1.2 Theoretical Underpinnings**

The dimensions, attributes and construct relationships appearing in the higher education brand equity model presented in this study are included based on a rigorous review of the brand literature (Chapter 2). The key areas of literature examined in the review include customer-based brand equity (CBBE) theory, services branding theory, the discourse concerning the commodification of education and whether students can be considered consumers, and the emergent body of work relating to higher education branding.

The sub-discipline of brand management emerged during the late-20<sup>th</sup> century and is situated within the broad discipline area of marketing. The brand construct is understood to be an intangible, market-based asset that results in increased revenues (Hunt & Morgan, 1995); thus, as a key creator of value, its management is viewed as a strategic priority (Farquhar, 1990).

The brand equity literature can broadly be divided into the firm-based approach that speaks to economic value, and CBBE, which seeks to understand the drivers of a firm's financial performance from a consumer behaviour perspective. This study focuses on the latter. The initial CBBE literature focuses on the favourability and uniqueness of brand image as perceived by the consumer (Keller, 1993), with the ultimate expression of brand equity being customer loyalty, measured through satisfaction, repeat purchase, and the willingness to pay a price premium (Aaker, 1996). However, despite developed economies being typically dominated by the services sector, earlier CBBE frameworks and their associated studies tended to focus on

fast-moving consumer goods (Christodoulides & De Chernatony, 2010). This gap has more recently been addressed by CBBE literature developed specifically for the service sector (Berry, 2000; de Chernatony & Dall'Olmo Riley, 1999; de Chernatony & Segal-Horn, 2003; Grace & O'Cass, 2005). This service branding literature argues that the distinguishing features of services—being intangibility, inseparability, heterogeneity and perishability (Lovelock, 1983; Onkvisit & Shaw, 1991; Zeithaml, 1981)—result in the primary locus of brand information being the service *experience*, and that the development of the *experiential brand* is therefore crucial to enhancing service brand equity (Berry, 2000). The service brand concept thus comprises both service promise and service delivery (Brodie, 2009).

Further to the development of a separate strand of the CBBE literature for services, factors such as market sector, product category and life stage are acknowledged as providing the context for consumers' value perception (Christodoulides & De Chernatony, 2010). As a result, industry-specific brand equity models have emerged where universal measures of brand equity have been criticised for not accounting for the characteristics associated with individual industries. This has been the case for higher education CBBE theory, in which it is argued that the sector is characterised by a unique combination of attributes that set it apart from other services. In the higher education sector, these characteristics include a dominance of both experience and credence attributes: intensive contact between student and institution occurring over a prolonged period; co-created outcomes being highly dependent on sustained effort and financial contribution on the part of the student (Chapleo, 2015; Hemsley-Brown & Oplatka, 2006); and that the return on effort, time, and money invested in attaining a qualification can only be assessed once a graduate's career has commenced at the end of the lengthy education process (Binsardi & Ekwulugo, 2003).

The higher education branding literature recognises and considers these differentiating factors in proposing sector-specific theory. As a result, several CBBE frameworks have been developed that are specific to the higher education sector (Aggarwal Sharma, Rao, & Popli, 2013; Bennett & Ali-Choudhury, 2009; Dennis, Papagiannidis, Alamanos, & Bourlakis, 2016; Goi, Goi, & Wong, 2014; Khanna, Jacob, & Yadav, 2014; Mourad, Ennew, & Kortam, 2011; Pinar, Trapp, Girard, & Boyt, 2014; Vukasovic, 2015). However, as the comparison of these studies in Chapter 2 will show, there is a deficit of consensus among the frameworks in respect of the attributes, dimensions and process by which CBBE is created in the higher education setting. This lack of agreement comes from the studies' divergent theoretical origins, measurement approaches and varying levels of brand experience across sample groups. Further confounding any comparison, some of the models reviewed measure customer perceptions of brand attribute value (Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014), while



others additionally articulate the *process* through which CBBE is created in the higher education setting (Bennett & Ali-Choudhury, 2009; Dennis et al., 2016).

### 1.3 The Research Problem and Research Questions

The research problem addressed in this dissertation is:

*What are the attributes and dimensions that influence student perceptions of Australian university brands, and what is the process of customer-based brand equity creation in this higher education context? How does this compare with other service industries?*

The conclusion drawn is that the attributes and dimensions of higher education brands are comparable to those in the other services industries examined, and the process of CBBE creation is substantially the same. It is argued that variances can be explained by the service characteristics of those industries.

This research problem can be articulated in terms of the following three research questions.

*RQ1. Which university brand attributes are meaningful to students?*

*RQ2. What is the relative influence of the attributes and dimensions of the university brand on perceived brand favourability, and how does this compare with other services?*

*RQ3. Is the process through which students develop loyalty towards university brands the same as for other services?*

The research approach involved the identification of a possible model solution from the service branding literature. The model was selected because it incorporates a broad, flexible inventory of service brand attributes and dimensions, it articulates the process through which service brand equity is created, and it has been empirically tested in several service industries. The model's related measurement scales were minimally adapted for the higher education context, and the scales and model tested in the Australian university setting. Theoretical support for the results is provided by referencing the higher education and service brand literature.

The current study utilises an adapted Service Brand Loyalty (SBL) model (Krystallis & Chrysochou, 2014; Pillossof, Nickel, & Krystallis, 2009). Originally developed by Grace and O'Cass (2005) as the Service Brand Verdict (SBV) model, the Pillossof, Nickel and Krystallis (2009) and Krystallis and Chrysochou's (2014) SBL model incorporates brand loyalty, rather than brand verdict, as the ultimate expression of CBBE. The current study proposes that the SBL model (Krystallis & Chrysochou, 2014; Pillossof et al., 2009) has applicability in the higher education setting, and that it can be adapted for use in this new context by minimally adjusting the associated measurement scales for context relevance.

To establish an inventory of brand attributes relevant to the higher education context, a detailed review of existing higher education brand equity models was undertaken (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Dennis et al., 2016; Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015). A categorisation of these higher education brand attributes, supported by service brand literature, subsequently allowed for their mapping against the attributes presented in the SBL model. This provided content validity to the model attributes given the higher education setting of the study and indicates alignment between the model attributes and the new theoretical context. Furthermore, a retention of the unaltered attributes, dimensions and relationships within the SBL model, and a mirroring of the methodology used in these previous studies, allows for the subsequent comparison of the results with those obtained in these studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). The relative influence of the model's brand attributes and dimensions across comparison service industries is explored, as is the process of service brand equity creation.

## **1.4 Research Methodology**

This study involves quantitative, primary research. As such it resides within the positivist paradigm (Bryman & Bell, 2011), assuming a realist ontology and a representationalist epistemology (Popper, 1979). The advantage of using approaches based on these assumptions in the higher education branding context is that they can be used to predictively model patterns of cause and effect, and to measure and control the brand equity phenomenon. The study is exploratory in nature, having the objectives of theory development and testing (Bryman & Bell, 2011).

The hypothesised higher education brand model is based upon Krystallis and Chrysochou's (2014) SBL model, which draws upon Pillossof et al. (2009), and Grace and O'Cass' (2005) SBV study. The model, operationalised via measurement scales minimally adapted to

incorporate considerations deduced from existing higher education customer-based brand theory, is utilised in a new study to test the hypotheses' applicability in the higher education setting.

Following the reference studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), the observational data for this research has been collected in a natural setting through a field study. Cross-sectional by design, the data for the study is gathered via an online survey targeting current, Australian university students. A non-probability quota sampling approach has allowed stratification of the sample according to demographic profiles that broadly reflect the composition of the general Australian university student population (Department of Education and Training, 2017). This approach has provided a convenient, timely and cost-effective means of gathering data where no readily available sample frame exists (Sekaran & Bougie, 2013).

The approach to data analysis for this study replicates that used by Grace and O'Cass (2005), Pillossof et al. (2009), and Krystallis and Chrysochou (2014), and adopts a partial least squares structural equation modelling (PLS-SEM) method. Maintaining the integrity of the initial model's core elements and structure, and utilising the same statistical methods as the reference studies, allows greater fidelity to the original studies and facilitates comparisons being made (Tabachnik & Fidell, 2007; Tabak, Khoong, Chambers, & Brownson, 2012). Furthermore, the variance-based, multivariate PLS-SEM technique is suitable where the research is exploratory in nature (Ringle, Sarstedt, & Straub, 2012). Its strengths lie in its ability to provide analysis of causal or structural equations, and simultaneously estimate both measurement and structural relations, and the relative contribution of multiple measures (Hair, Ringle, & Sarstedt, 2011; Nitzl, 2016). Additional advantages PLS-SEM provides over other covariance-based structural equation modelling techniques (CB-SEM) are: it can incorporate formative and reflective measures; it is well suited for complex hierarchical component models in which two or more levels of construct are layered to combine several related concepts and simplify structural paths; and it can work with considerably smaller sample sizes than other CB-SEM approaches, having less restrictive assumptions regarding normality (Hair, Hult, Ringle, & Sarstedt, 2014; Hair, Sarstedt, Ringle, & Mena, 2012; Nitzl, 2016; Ringle et al., 2012). The methodology is discussed in detail in Chapter 3, including the PLS-SEM statistical method and process, and Chapter 4 details the steps taken in the analytical procedure, leading to the results.

## 1.5 Contribution of the Research

The findings in Chapter 5 interpret the results of the study in response to the research issues. The application of the SBL model in the study's higher education context and the associated research findings are used as a basis from which to induct new theory concerning the dimensions and attributes of the higher education brand, and the process through which brand perceptions are created in this sector. Furthermore, it is proposed that the SBL measurement scales and model can be used by university brand management as a diagnostic tool, to measure the performance of their own brands and produce data that could inform future brand strategy.

The results of this exploratory study indicate the applicability to the higher education context of the SBL model (Krystallis & Chrysochou, 2014; Pillossof et al., 2009). They suggest the process of brand equity creation in universities is substantially the same as those in the airline, banking and retail industries compared (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), thereby inferring a link between brand equity creation processes in higher education and services more broadly. The findings therefore not only contribute to the body of branding literature specific to the higher education industry, but they also add to services branding literature by extending the application of an existing, empirically tested model to a new services context. The findings make additional contributions to the literature in regard to understanding the relative influence of higher education brand *attributes*. They not only highlight the importance of advertising, publicity and word-of-mouth to the creation of brand perceptions prior to actual experience of the higher education brand, but confirm the paramount importance of employee service, feelings and self-image congruence as evidence of the brand as experienced by students. Furthermore, a comparison of the relative importance of brand attributes across the industries to which the model has been applied, contributes to the understanding of how and why service characteristics can impact upon consumer perceptions.

The findings may also be useful to university brand managers in several respects. They suggest the scales and model could be used as a diagnostic tool by higher education brand managers to understand the relative strengths and weaknesses of the *attributes* of their university brands, and to measure brand performance via these attributes' positive effect on satisfaction, brand attitude and, ultimately, brand loyalty. Potential also exists for the brand strengths and weaknesses of an individual institution to be benchmarked against a future, sector-wide study using the same scales and model; or for a single institution to use the scales and model in a longitudinal study to measure changes to brand strength over time. Benchmarked findings could allow higher education brand managers to identify those attributes that fall short of sector norms and detrimentally affect their institution's brand equity, and this empirical evidence could provide the basis for an evidence-based strategy to develop an institution's brand.

## 1.6 Delimitations

This exploratory study sets out to identify the attributes and dimensions of university brands from a student perspective, and the process of CBBE creation in a higher education context. As the study is exploratory in nature, it is undertaken with the intention of developing tentative theories based on a well grounded picture emerging from the findings (Cuthill, 2002); however, given the smaller sample typically used for this type of study, the findings are not generalisable to the population at large (Bryman & Bell, 2011)—in this case, to all Australian university students.

Considering the experiential nature of higher education (Berry, 2000; Dennis et al., 2016; Mourad et al., 2011), the units of study for the research are current university students who not only have awareness of their university brands but have direct experience of the educational service provided by their institution. As the researcher is Australia-based, this country context was selected for the study based on convenience. The study therefore excludes students studying at any universities that do not have a presence in Australia. As the study is confined to students currently studying at Australian institutions, it does not seek to make any cross-cultural comparisons, nor does it consider the influence varying cultural contexts may have on university brand perceptions (Hakala, Svensson, & Vincze, 2012; Yoo & Donthu, 2002). Although the sample incorporates both domestic and international tertiary students studying in Australia, the results are not differentiated based on country of student origin, as a comparison of domestic and international student perceptions of Australian university brands is not within the scope of this study.

Furthermore, a decision was made to draw the sample from the Australian universities, of which 38 of 41 are public, (Universities Australia, 2018a) and together account for 95% of higher education enrolments in Australia (Edwards & Radloff, 2013). Students enrolled in degree programs at private higher education institutions are therefore excluded from the study, as are students enrolled in degree programs at Technical and Further Education institutions, as these brands are more typically associated with vocational training. The study therefore does not consider the differing emphasis students may place on higher education institution brand attributes and dimensions according to whether they are enrolled with a public university or private university, or non-university higher education institution (Goi et al., 2014).

Whilst the study incorporates students across all disciplines and includes both undergraduate and postgraduate students, prospective university students are not included as they may not have had any direct experience of an Australian higher education brand. Graduates who are no longer studying at any Australian university are also excluded from the sample as it is not the purpose

of this study to compare the university brand perceptions of current students against those who have graduated and left their respective institutions.

The research problem also seeks to compare the process by which CBBE is created in the Australian university context of the study to other service industries. While a comparison of the current study's results is made to those of the studies on which the adapted scales and theoretical model have been based, it is limited to those service industries on which these studies have focused—namely airlines, banking, and retail (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Additionally, it is noted that the reference studies and the current research are small scale and exploratory in nature, and any conclusions drawn from these comparisons are tentative (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009).

## **1.7 Dissertation Outline**

This dissertation is divided into five chapters. **Chapter 1** contains the introduction, providing a context to the research, the problem to be addressed and the contribution it will make, as well as the methodological approach and delimitations.

**Chapter 2** reviews the body of literature and theoretical underpinnings that lead to the identification of the research problem. It commences by situating the study within the broad discipline area of marketing, and specifically within the sub-discipline of brand management, and then provides a review of the parent literature concerning multi-dimensional, CBBE frameworks, as well as the intermediate literature on service sector brand theory. After addressing the question of whether tertiary students can be considered consumers, focus shifts to brand equity frameworks specifically developed for higher education institutions. A comparison of these studies then leads to the identification of gaps in the current literature and the development of the research problem and questions, following which the SBL conceptual model and hypotheses (Krystallis & Chrysochou, 2014; Pillossof et al., 2009) are proposed as a means of addressing the identified issues.

**Chapter 3** addresses the methodology for the study. In this chapter, an overview of the research design and rationale is provided. The chapter describes and justifies the sampling technique used, how data was collected from the Australian university student population, and how issues of ethics and confidentiality were mitigated. Details of the survey instrument are provided, including a rationale for minor adaptations to the questionnaire that were needed to suit the study's higher education context. A thorough explanation is then provided for the PLS-SEM

analytical method used in the main study. Attention is given to the reflective–formative nature of the PLS-SEM model under examination, which can be characterised as a Type II (Chin, 1998b; Jarvis, MacKenzie, & Podsakoff, 2003), and the related two-stage approach required for its analysis (Amaro & Duarte, 2016; Gaskin, 2012, 2017; Hair et al., 2014). Lastly, sample size for this exploratory study is justified based on the analytical method selected.

**Chapter 4** provides a detailed account of the analytical processes as they were performed, and the results produced. It commences with the specification of the model, describing the outer model first order reflective and second order formative constructs, and the hypothesised inner model relationships, and provides an overview of the analytical process to be followed. This is followed by the model estimation and analysis in which pilot study data is used to assess the goodness of measurement instrument, and that it accurately and consistently measures the constructs as intended. Having established the reliability and validity of the measurement instrument, the sections concerning the main study then proceed to detail the steps taken to prepare the data for analysis, the sample characteristics, and the procedure and results for the outer and inner model assessments.

Finally, in **Chapter 5** the results produced via the application of the analytical procedures are interpreted by referencing the higher education and service brand literature, resulting in the research findings. With the specifics of the research questions in mind, conclusions are initially drawn regarding the outer model, how the various brand attribute indicators contribute to their respective second order constructs—*brand hearsay* and *brand evidence*—with the discussion then turning to the results for the hypothesised inner model relationships. The results are additionally compared to those obtained in studies using either the SBV or SBL model in different service industries (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillososof et al., 2009), and reference is made to the theory to justify variances across industry contexts. The conclusion then addresses the issues raised in the overall research problem. In view of the findings, the implications of the research for the theory, methodology and managerial practice are then presented. Further to the delimitations outlined in Section 1.5 (above), minor limitations encountered during the study are also exposed towards the end of Chapter 5. The dissertation then concludes by detailing implications for further research and offering ideas for possible future study opportunities.

## **1.8 Chapter Summary**

This introductory chapter has laid the foundations for the dissertation. To establish the context of the research, a theoretical background was provided. The research problem and the research issues were introduced, followed by a description and justification of the research methodology, and an overview of the contribution the research makes to the extant literature. The delimitations of the study are identified and an outline of the dissertation provided. It is on these foundations that the dissertation proceeds with a detailed description of the research.



## **CHAPTER 2: LITERATURE REVIEW, THEORETICAL UNDERPINNINGS AND HYPOTHESES DEVELOPMENT**

### **2.1 Introduction**

The purpose of this quantitative study is to propose and test a predictive model, drawn from service branding literature (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillosos et al., 2009), that identifies the drivers of CBBE in a higher education services context, and the process by which it is established. In the model, the ultimate expression of student-based brand equity is university brand loyalty. The model measures the relative weightings of the institution’s service attributes that contribute to favourable student perceptions of the university brand, the totality of which constitute student-based brand equity.

In this chapter, the theoretical context is provided for the current study, the gaps in the existing literature are identified, and the research problem and research questions are developed. This study is contextually situated within the broad discipline area of marketing, and specifically within the sub-discipline of brand management. The focus of this study is not on the positivistic, economic perspective of brand, but on the interpretivist, customer-based conceptualisations presented in the CBBE literature.

The chapter presents an initial survey of the parent literature and considers the key brand dimensions and determinants of brand equity that can be found in the earlier, predominantly conceptual frameworks. These are viewed either from a psychological standpoint of how consumer brand knowledge is created (Aaker, 1991; Keller, 1993), or from an information economics standpoint (Erdem & Swait, 1998). A brief overview is then provided of the subsequent empirical studies that operationalise and provide support for the earlier theoretical models. Following this, the review turns to the intermediate literature on service sector brand theory that addresses the distinguishing features of services (Zeithaml, 1981). This literature examines the role of brand in *service* environments (Berry, 2000; de Chernatony & Dall’Olmo Riley, 1999; de Chernatony & Segal-Horn, 2003; Grace & O’Cass, 2005), and highlights the need for service brands to focus on the creation of positive customer experiences through value-adding service processes (Brodie, 2009).

Before turning to the higher education specific brand models, the controversy over whether higher education students can or should be considered *consumers* of higher education is addressed. The review goes on to compare in detail a range of CBBE models that have been developed for the higher education context (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Dennis et al., 2016; Goi et al., 2014; Khanna et al., 2014; Mourad et al.,

2011; Pinar et al., 2014; Vukasovic, 2015). The comparison of these recent frameworks reveals a deficit of consensus in relation to the processes and drivers that underlie the creation of value for higher education brands, resulting primarily from their divergent theoretical origins and measurement approaches, and varying levels of brand experience across the studies' sample groups.

Deliberation over these seemingly contradictory higher education brand models leads to an identification of gaps in the current literature, and development of the research questions and theoretical model with which it is proposed these deficits can be addressed. As higher education institutions are service brands, they may be well suited to the application of an adapted *service* brand equity framework. It is proposed that the service brand model originally developed by Grace and O'Cass (2005), and subsequently adapted by Pillossof et al. (2009) and Krystallis and Chrysochou (2014), may provide an appropriate solution for university brands.

## **2.2 Parent Theories and Conceptual Models**

### **2.2.1 Brand Theory: Context and Definitions**

The theory examined in this literature review is situated within the broad discipline area of marketing and is more specifically located within the sub-discipline of brand management that emerged during the mid-1980s. As the brand construct is understood to be a key creator of value, its management is viewed as a strategic priority (Keller, 2013).

The development of the branding concept can be traced back across the millennia. Ancient Egyptians applied symbols to their bricks as a means of differentiating their manufacturer, for centuries cattle have been branded to identify their owner, and the trade guilds of medieval Europe used trademark *symbols* to assure consumers of consistent quality (Farquhar, 1990; Moshin, 2008). This use of names or symbols for the identification and differentiation of products aligns with what is considered the classical definition of branding (American Marketing Association, 2016). However, the *strategic* benefits of branding were recognised as early as the 19<sup>th</sup> century with manufacturer names being substituted with those of famous people, places of origin, or animals to provide the advantages of strengthened positive associations, enhanced consumer recall, and added perceived value of the product (Farquhar, 1990).

With the emergence of the brand management discipline in the late 20<sup>th</sup> century, the notion of the brand as an enhancer of a product's value evolved whereby brands became thought of as identifiable, intangible assets. This added value, or *equity*, is a multi-dimensional concept that

can be viewed from a variety of perspectives including that of the consumer, the firm, employees, or financial markets. As brand equity can be considered as an objective, financial expression, or from a strategic, subjective viewpoint, the brand management discipline can be classified according to two paradigms: one that takes a positivistic stance, and the other that is constructivist or interpretivist in nature (Heding, Knudtzen, & Bjerre, 2016).

The positivistic paradigm has a company focus, addresses the measurement of financial *outcomes* (Ailawadi, Lehmann, & Neslin, 2003; Barth, Clement, Foster, & Kasznik, 1998; Simon & Sullivan, 1993), and holds the notion that the marketing mix, informed by quantitative data, should be manipulated to affect consumer choice (Kotler, Burton, & Keller, 2009). From this perspective, the consumer is a passive recipient and brand is a “lifeless artefact ... positioned, segmented and used by marketers to create an image” (Hanby, 1999, p. 12) with a view to creating economic brand equity. The goal of brand managers is therefore to enhance products and services with the endowment of brand equity (Park & Srinivasan, 1994); an intangible, market-based asset that can provide the benefits of increased revenues and sustainable competitive advantage (Hunt & Morgan, 1995), and bridge both marketing and shareholder value (Srivastava, Shervani, & Fahey, 1998).

On the other hand, the interpretivist brand paradigm views the creation of brand equity as an “interaction between marketer and active consumer” (Heding et al., 2016, p. 21) in a relationship that forms over time. This approach, which seeks to understand the drivers of brand equity from a *customer* perspective, is the focus of this literature review. This paradigm considers the psychology of the consumer and the equity returned to the firm as a result of perceived brand value. From this viewpoint, brand equity can broadly be characterised as “a set of assets and liabilities linked to a brand, its name and symbol, that adds to or subtracts from the value provided by a product or service to a firm and/or to that firm’s customers” (Aaker, 1996, pp. 7-8). In this sense, brand equity is derived from the holistic sum of all value consumers attach to a brand (Moshin, 2008) as a result of “favourable strong, and unique brand associations in memory” (Keller, 1993, p. 1), with positive customer perceptions driving outcomes such as increased purchase intention and brand preference (Cobb-Walgren, Ruble, & Donthu, 1995), customers’ willingness to pay a premium price for a trusted brand (Erdem, Swait, & Louviere, 2002), and ultimately, brand loyalty (Keller, 1993). The following section overviews the complementary range of key theories that incorporate these customer-based views of brand equity.

### 2.2.2 Customer-Based Brand Equity: Key Conceptual Models

The CBBE literature can be grouped by its dimensionality and perspective. The *external* or customer-based perspectives of Aaker (1991, 1996), Blackston (1992) and Keller (1993, 2001) can be contrasted with the work of Erdem and Swait (1998) and Burmann, Jost-Benz and Riley (2009) in which *multi-perspectival* views are presented, incorporating both the customer-based and firm-based drivers of brand equity.

The external conceptualisations of brand equity can be characterised as residing within consumer memory. They incorporate dimensions related to customer brand awareness, customer-perceived brand associations, the overall brand image held in consumers' minds, and the resultant brand–consumer relationships. Keller's (1993) associative network memory perspective describes the way consumers retrieve brand knowledge and how the brand node is distinguished from others in memory, with CBBE based on *brand awareness* strength and the *brand image* held in the mind of the customer. Customer *brand awareness* is determined by the strength of the brand node in memory as represented through *brand recognition* when presented with a brand cue, and *brand recall* or customers' ability to retrieve a brand from memory when presented with a product category (Keller, 1993). Consumers' brand perceptions or *brand image* is made up of the totality of *brand associations* linked to the brand node retained in memory (Keller, 1993). Keller (1993) categorises this nodal network of brand associations by three levels of abstraction—attributes, benefits and attitudes—the favourability, strength and uniqueness of which are the distinguishing dimensions of brand knowledge and the key determinants of the differential response that signals brand equity. Marketing activity enhances brand awareness, affects brand knowledge and promotes a positive brand image (Keller, 1993). When combined, these factors enhance the probability of brand search, brand selection, repeat purchase and brand loyalty, and reduce elasticity of response to price increases, allowing price premiums to be charged (Keller, 1993).

Blackston (1992), who also focuses on consumer perceptions, additionally proposes a process of brand equity creation that involves the interaction of the personalities of both brand and consumer in a *brand relationship*. The success of this relationship, or the creation of brand equity, is dependent on customer satisfaction, trust in the brand, and on there being compatibility between the personalities of the brand and the customer. Blackston's (1992) conceptual paper calls for measurement of the extent to which brand attitudes and behaviours align and resonate with consumer self-perception. As such, it extends the concept of brand personality to include both what the customer perceives of the brand and what the customer believes the brand thinks of them (Blackston, 1992). At a corporate brand level, two additional factors play a role in the formation of a positive consumer-brand relationship: the establishment

of *brand trust*, which incorporates perceived credibility and reliability; and customer satisfaction, which depends on the brand being consumer-centred, proactive and innovative in responding to consumer needs (Blackston, 1992).

For Aaker (1996) the key indicators of CBBE are *customer loyalty*, *customer-perceived quality*, and measures of *association*, *differentiation* and *brand awareness*. Customer loyalty is measured through customers' willingness to pay a premium, customer satisfaction, and repeat purchase behaviour; customer-perceived quality is measured via perceived consistency relative to competitors; measures of association and differentiation include organisational associations, perceived value, and perceived differentiation of brand personality; and the measurement of brand awareness is based on brand knowledge, recognition and recall (Aaker, 1996). In addition to measures based on customer perception, Aaker (1996) adds a fifth category that incorporates two sets of *market behaviour* measures, namely market share, and market price and distribution coverage, both of which are a reflection of the outcomes of CBBE for the firm.

Building on these earlier conceptualisations, Keller (2001) later presents a CBBE pyramid model that represents a four-stage brand equity building process, the six building blocks of which culminate in the pinnacle of customer brand resonance. The foundational stage concerns brand identity, incorporating brand awareness, recall and category salience (Keller, 2001). In the second stage, brand meaning is established via associations that are strong, unique and favourable to customers, and are either related to product performance or imagery, such as purchase and usage situations, user profiles, and experiences (Keller, 2001). The third stage of the brand equity building process involves positive, accessible brand responses based on judgements of quality, firm credibility, brand superiority, and the association of feelings such as warmth, excitement, social approval, and security (Keller, 2001). Lastly, the model's brand resonance pinnacle represents consumers' identification with the brand and the intensity of their psychological bond expressed through behavioural loyalty, attitudinal attachment, and active consumer-brand engagement (Keller, 2001).

Juxtaposed with these external, customer-based conceptualisations of brand equity are the multi-perspectival views of Erdem and Swait (1998) and Burmann et al. (2009), which incorporate both determinants that exist *externally* within the minds of customers, and *internal*, firm-based brand equity determinants. The empirically tested information economics brand equity model developed by Erdem and Swait (1998) explains how customers view brands as signals, capable of addressing information asymmetries, clarifying product positions, and supporting the credibility of product claims made by manufacturers. Their study compares consumer perceptions of short and long-term experience attributes for products whose attributes are imperfectly observable, and concludes that information search costs can be positively

impacted by brand credibility (Erdem & Swait, 1998). The study's results suggest that firms wishing to build brand equity must ensure their projected brand signal is unambiguous, clear and consistent across the marketing mix (Erdem & Swait, 1998). Furthermore, firms must invest in product development to ensure the delivered product is consistent with their brand promise (Erdem & Swait, 1998). Brand clarity is a reducer of perceived risk; the consistency of the brand signal positively affects customer-perceived credibility, which reduces information search costs and has a strong, positive effect on perceived quality; and perceived quality and reduced information search costs both influence brand equity (Erdem & Swait, 1998).

Customer-based brand image and firm-projected brand identity also both feature in the Burmann et al. (2009) conceptual framework. Here brand equity is considered both from the financial and behavioural perspectives (Burmann et al., 2009). In their model, Burmann et al. (2009) draw on two strategic management paradigms: the brand identity philosophy of branding (Aaker, 1996); and the market-based and competency-based views of the firm (Porter, 2004; Teece, Pisano, & Shuen, 1997). They assert that as firm-constructed brand identity is the basis for customer perceptions it necessarily precedes brand image; however, brand identity is moderated by employee behaviours (Burmann et al., 2009). They thus propose that dimensions of internal firm substance and external customer acceptance are the basis for brand strength (Burmann et al., 2009). To quantify brand strength, the model also includes indirect measures of internal financial equity including the firm's current and projected future cash flows that are discounted according to perceptions of brand risk (Burmann et al., 2009). Together, these measures indicate a firm's ability to ensure present and future financial brand equity by anticipating market needs (Burmann et al., 2009).

The theories presented in this section form what is considered the parent CBBE literature and provide an important foundation for the subsequently developed body of work pertaining to service sector branding. However, given the largely conceptual nature of this seminal theory, the next section overviews a range of empirical studies and their approaches to operationalising the CBBE constructs before the review turns to the intermediate service brand theory.

### **2.2.3 The Operationalisation of Customer-Based Brand Equity Constructs**

The CBBE frameworks presented by Aaker (1991, 1996), Blackston (1992), Keller (1993, 2001) and Burmann et al. (2009) are predominantly conceptual; whereas the Erdem and Swait (1998) study was empirically tested on a relatively small sample and narrowly restricted products and markets. A further body of research has therefore sought to operationalise CBBE theory. These quantitative studies are situated within the positivist paradigm and can be

classified according to a measurement approach that is either direct or indirect (Christodoulides & De Chernatony, 2010).

Empirical research on *direct* measurement approaches for CBBE is generally confined to earlier studies (Christodoulides & De Chernatony, 2010) that seek to separate brand value from product value, and attempt to measure brand equity either by comparing observed consumer preferences for branded and unbranded products (Leuthesser, Kohli, & Harich, 1995; Park & Srinivasan, 1994), or by measuring brand utility (Swait, Erdem, Louviere, & Dubelaar, 1993). For example, the procedure proposed by Park and Srinivasan (1994) involves disaggregating CBBE into consumer preference of the brand's physical attributes and its symbolic associations. Conversely, Swait et al. (1993) argue that brand equity should be measured not through isolated brand parameters, but throughout all components of a brand's utility through a monetary expression that encompasses brand name and product attributes via a hypothetical price at which each brand would have equal market share. Further to these approaches, the direct measurement procedure developed by Leuthesser et al. (1995) gives consideration to the halo effect or perceptual distortion of consumers' existing brand predisposition. Regardless of the specific approach, the direct measurement of CBBE has proved conceptually and methodologically problematic, as brands fundamentally supervene on products such that separability of the brand becomes an issue (Grassl, 1999). From a managerial perspective, application of direct measurement approaches can be onerous as they rely on complex statistical methods yet yield little insight into the *drivers* of brand value (Christodoulides & De Chernatony, 2010).

By measuring brand equity through its outcome variables, the *indirect* approaches to CBBE measurement are considered to provide a more holistic, consumer-based view of the brand-product relationship. These outputs encompass price premium, or the measurement of the price differential between branded and unbranded products (Ailawadi et al., 2003; Netemeyer et al., 2004), or consumer-based manifestations including awareness, associations, perceptions of quality, satisfaction and brand loyalty (Buil, de Chernatony, & Martínez, 2008; de Chernatony, Harris, & Christodoulides, 2004; Yoo & Donthu, 2001). Notwithstanding the usefulness of indirect scales as managerial tools and their superiority on a diagnostic level, a comparison of multiple studies that adopt the indirect measurement approach indicates a lack of agreement on the dimensions of CBBE (Christodoulides & De Chernatony, 2010); however, a limited number of studies are shown to align with Aaker's (1991, 1996) original conceptualisation of brand equity (Buil et al., 2008; Pappu, Quester, & Cooksey, 2005; Washburn & Plank, 2002; Yoo & Donthu, 2001).

Considering the diversity of brand equity measurement approaches, Christadoulides and de Chernatony (2010) question whether a universal measure of brand equity is either achievable or desirable, given the multi-faceted nature of brand equity and that factors such as market sector, product category, product life stage and brand vision provide the context for value perception. Similarly, Baker, Nancarrow and Tinson (2005) suggest accounting for factors such as market sector and life stage of the brand when applying any brand equity measurement scale. These perspectives on the requirement for sector-specific theory are also informed by the earlier CBBE scales being focused on fast-moving consumer goods (Christodoulides & De Chernatony, 2010). Consequently, this literature review will now turn to the branch of brand theory that specifically addresses the measurement of CBBE in *service environments*.

### **2.3 Customer-Based Brand Equity in Service Environments**

Although developed economies are typically service sector dominant (Soubbotina, 2000), the earlier CBBE frameworks and studies tend to focus either on fast-moving consumer goods (Leuthesser et al., 1995; Park & Srinivasan, 1994; Yoo & Donthu, 2001) or neglected to consider any distinction between goods and services (Christodoulides & De Chernatony, 2010). Keller (2001) recognised these limitations in his development of the CBBE pyramid model that he intended to be sufficiently versatile to accommodate a range of brand and industry settings including “products, services, organisations, people and places” (2001, p.3). Subsequently, a body of services-specific branding literature emerged to address this gap by combining brand identity principles, brand equity theory and services marketing concepts (Berry, 2000; de Chernatony & Dall’Olmo Riley, 1999; de Chernatony & Segal-Horn, 2003; Grace & O’Cass, 2005).

According to the dominant services marketing literature, services are distinct from goods because of their differentiating characteristics of intangibility, inseparability, heterogeneity and perishability (Lovelock, 1983; Onkvisit & Shaw, 1991; Zeithaml, 1981). Being either experience or credence dominant (de Chernatony & Dall’Olmo Riley, 1999), non-physical and unable to be seen or sampled before use, services are difficult to evaluate prior to purchase (Zeithaml, 1981). Furthermore, as the production, delivery and consumption of services cannot be separated, consumers must evaluate quality during or after service delivery (Gronroos, 1978; Onkvisit & Shaw, 1991; Zeithaml, Parasuraman, & Berry, 1985). As service performance and consumption occurs simultaneously, delivery is highly dependent on the individuals involved. As such, services can be considered a co-production between the service provider(s) and consumer(s), and customer experience is subject to variability which is heightened where



multiple touch points and personnel are involved, or sustained contact is required (Onkvisit & Shaw, 1991; Zeithaml et al., 1985).

As a consequence of these service characteristics, and because consumers are less able to evaluate services in advance of purchase than goods, customers perceive greater purchase risk for services (Parasuraman, Zeithaml, & Berry, 1985). The reputation of the service brand can therefore act as an important information source and risk reliever, as it has the potential to provide service customers with information about experience and credence qualities ahead of their purchases (Erdem & Swait, 1998). Furthermore, the strategic branding of services can provide differentiation, and by creating distinctiveness can facilitate consumer choice (Gabbott & Hogg, 1998). Service firms should therefore not only leverage their brands to make their externally communicated service product more easily understood, to reduce perceived risk and to act as a heuristic to simplify customer choice, but they must also ensure the communicated brand promise is consistent with the service quality delivered, and a positively differentiated customer experience is created (Berry, 2000; de Chernatony & Dall'Omo Riley, 1999). For services, customer *experience* becomes the primary locus of brand information (Berry, 2000) and a service firm's successful development of an *experiential brand* becomes crucial given a service product's potential lack of differentiating physical features (Zeithaml, 1981).

According to Berry (2000) the *components* of a service brand include: the presented elements of the *brand identity* incorporating company name, logo, advertising, facilities, the behaviours and appearance of service personnel, and the augmentation of the core service; brand meaning, or the *brand image* that resides in consumers' minds and results from customer perceptions; and *customer experience*, which is most the powerful driver of belief in the brand. Of secondary importance are customer brand awareness and uncontrolled, external communications about the brand through publicity and word-of-mouth (Berry, 2000). The foundational elements of Berry's hypothesised model are similar to those found in the empirically tested SBV model developed by Grace and O'Cass (2005). Their study indicates that experienced *brand evidence* and communicated *brand hearsay* are positively related to service brand *satisfaction* and *brand attitude*, from which the customer's ultimate *brand verdict* results (Grace & O'Cass, 2005). In their model, service *brand evidence* includes indicators of reputational and economic value such as name and price, as well as the value *experienced* by customers via exposure to core services, the servicescape, employee service, self-image congruence and customer feelings; whilst brand *hearsay* incorporates both controlled and uncontrolled communications that also have a bearing on customer perceptions (Grace & O'Cass, 2005). The Grace and O'Cass study (2005) reveals that while all these dimensions are perceived by customers as carrying service brand meaning, the experienced elements of the brand are key to the formulation of the consumer-held brand image and attitudes towards the service brand.

The experience creation process plays an integral role for service brands, and marketing is mediated by experiences that drive value perception (Berry, 2000; Dall'Omo Riley & de Chernatony, 2000). Whilst the perception of promises made in marketing is key to brand image, the alignment of customer expectations and their evaluation of the delivered service is essential for establishing perceptions of value, trust and loyalty to the firm (Brodie, 2009). The service brand thus contains both service promise and service delivery elements (Brodie, 2009). As consistency between stakeholder perceptions and experiences is required for service brand strategy to succeed, service firms must recognise the equally important roles of advertising and the optimisation of the customer experience in the development of CBBE (de Chernatony & Segal-Horn, 2003). While promises made via advertising have a greater influence on perceived quality than service delivery, perceived value, which mediates perceived service quality and customer loyalty, is positively influenced where evaluation of the delivered service meets or exceeds the brand promise (Brodie, Whittmore, & Brush, 2009). This is consistent with Srivastava et al. (1998), and Rust, Danaher and Varki (2000) who find that in services branding, the key determinant of competitive advantage is the link between customer value and brand loyalty.

For service firms wishing to achieve consistency between customer expectations and experience, the alignment of the external brand expression and internal brand execution is critical. This objective is dependent on the development of communications that are cohesive across public and internal stakeholder groups. Thus, brand promotion plays a key role both by assisting customers to understand and visualise intangible service products, and as a central strategy for internal firm communications and training for staff as a means of re-enforcing a consistent understanding of the brand (Berry, 2000; Berry & Parasuraman, 1993). These internal communications extend to enhancing employees' understanding of the firm's deeply embedded core values, thereby ensuring consistency between values and staff behaviours. By reinforcing a consistent customer-brand relationship across all points of contact, service firms can enhance feelings of trust and closeness towards the brand and enhance a positively differentiated service experience for their customers (Berry, 2000).

Although universities bear the hallmarks of service institutions, making the connection between higher education and service brand theory has been contentious. This is due to the argument over whether students can be considered *consumers* of education services. The following section therefore addresses the issue of whether students are consumers before proceeding to examine branding theory specific to the higher education sector.

## 2.4 The Commodification of Education and the Student Consumer

The application of commercial service brand theory to the higher education context requires education to be viewed as a marketised service, and the student seen a consumer to whose needs the institution must attend. This perspective is contentious as it is at odds with the traditionally held philosophical ideals of the pursuit of knowledge as its own end, of the triumph of reason, the purpose of higher education being to create knowledge for the service of mankind, and the notions of self-governance and academic freedom that have been central to the idea of a university (Jarvis, 2014).

Where once higher education was characterised as being transformative, with the academic guiding the undergraduate to *be* learners and critically engaged scholars, it is argued that students now undertake higher education to *have* a degree (Molesworth et al., 2009). As such, universities have not been impervious to the market ideology, resulting in a shift in focus from the higher education process to viewing the tertiary *qualification* as a commodity that is instrumental in furthering career opportunities. Industrialisation, globalisation and an increasingly competitive job market have driven a growing societal desire for educational credentials, and students have become consumers of qualifications.

Simultaneously, the rise of numerous transnational trade agreements has seen the liberalisation of education. This, together with the neo-liberalism that has become prevalent in many Western countries, has seen the introduction of fees to higher education, giving tangible form to the notion that students are customers (Coughlan, 2009). As universities have had to compete for reduced public funding and defend market share to private institutions, corporate management practices have become commonplace in the sector to grow student numbers, emphasise accountability and assure quality (Geiger, 2004; Jarvis, 2014; Laing, 2016). Reflecting the rise in the broader market of marketing concepts that focus on the needs of the consumer rather than the primacy of the product or producer, higher education institutions have also turned to the service industry customer model for students (Clayson & Haley, 2015).

The consumer metaphor in higher education is aligned with universities' introduction of the concepts of service quality (Zeithaml et al., 1985) and total quality management (Venkatraman, 2007), where quality is defined in relation to the requirements of the consumer. The shift towards this student as consumer perspective is evident not only in promotions to prospective students (Klassen, 2001), but in faculties being required to develop marketing plans, and students typically being required to complete surveys concerning their experiences of the education service quality (Clayson & Haley, 2015). Students have become consumers in the sense that they are paying for a service, and the rights and obligations associated with this have

become integral to the metaphor (Maringe, 2011). Reinforcing the centrality of the student in higher education has been a gradual swing away from the paradigm of the teacher as scientist and the student as research assistant with both serving the purpose of education itself (von Humboldt, as cited in Ash, 2006), towards the importance of teaching and student learning. Historically contextualised, this new focus on learner needs and the expectation that students should feel comfortable in a safe learning environment, aligns with shifts in societal norms concerning individual responsibility and duty of care (Clayson & Haley, 2015).

The perspective that education is a resource that student consumers seek to acquire and the adoption of customer-oriented marketing models by institutions are seen by many critics as detrimental. Jarvis (2014) observes that the contemporary university sits awkwardly between two narratives: one champions academic freedom and the creation of new knowledge by exploration and research; and the other imposes neo-liberal managerial practices based around efficiency, value, performance and economic worth. Viewing students as consumers accepts higher education as an individual, private investment, as opposed to a public good, the purpose of which is to educate society (Dundon, 2015) and place knowledge in the service of mankind (Jarvis, 2014). Terms such as competition, failure and inflation, drawn from an economic market lexicon, are increasingly common in a higher education environment that has become commoditised through the currency of grades and the value of a qualification in the employment market (Beatty, 2004). The “monetisation” metaphor associated with grades is seen as objectifying education, distracting students from intrinsic benefits such as personal intellectual development, reinforcing extrinsic motivation and the hierarchical power relations between professors and students, and fragmenting academic achievement into assignments rather than overall learning (Bowles & Gintis, 1976). Further subverting the classical ideal of education to attain higher thinking, is ‘credentialism’ or high GPA attainment being linked to employment outcomes and wage earning capacity; this prioritisation of grades over learning in and of itself results in the selection of easy classes, or the pursuit of high-grading professors to maximise gain (Clayson & Haley, 2015; Fairchild & Cragg, 2014). Given the marketisation of the higher education sector and the established relationship between student satisfaction, retention, progression and graduation (Kara & DeShields, 2004), it has been argued that viewing students as customers has brought pressure to bear on faculty to apply lenient grading standards, leading to grade inflation, and undermining their role as regulators of standards (Hubbell, 2015; Sharrock, 2000). Critics are concerned at the ideological gap that exists between student consumers’ short-term wants, and institutions’ long-term interests (Ng & Forbes, 2009; Nguyen & Rosetti, 2013). Institutions’ focus on pleasing student consumers comes with inherent risks, including lowering academic standards, a potential willingness to prioritise likeability over critical content, to act upon expressions of discontent in teaching evaluations, or pay bonuses to

faculty for positive evaluations (Fairchild & Crage, 2014). It also transfers personal accountability for performance away from the student and onto the service provider or professor (Bay & Daniel, 2001). It is argued that if education is viewed as an economic transaction, students are likely to see themselves as recipients of a service rather than as co-creators. This will impoverish higher education, as the risk-taking usually associated with learning and being part of an academic community does not fit with this passive model of education (Naidoo & Jamieson, 2005).

Whilst the critics' concerns centre on an apparent incompatibility between the short-termism of the student-driven ideology and longer-term educator-driven interests, it is possible to close this ideological gap and maintain high academic standards and strong student satisfaction (Nguyen & Rosetti, 2013). In a study of the best college professors, Bain (2004, as cited in Nguyen & Rosetti, 2013) found that the best teachers set high but realistic and meaningful standards, create collaborative learning environments and are supportive of student efforts. Similarly, Sautter, Gagnon and Mohr (2007) found that the marketing professors recognised as being the best, promulgated high academic standards whilst focusing on developing a culture of learning. As customer satisfaction results when the gap is resolved between expected quality and perceptions of service delivery (Zeithaml et al., 1985), student consumers will express greater satisfaction when guided to appreciate the real benefits of the educational product (Ng & Forbes, 2009). Furthermore, as education is a co-production between student and institution, educators must design their services to bridge the ideological gap by designing a service that caters to student expectations while also delivering strong pedagogical outcomes (Nguyen & Rosetti, 2013). Viewing education as a *partnership* model between the institution and students provides for the integration of customer-oriented concepts, and rather than viewing the student as the primary stakeholder needing to be pleased, the institution–student relationship should be viewed as a collaboration (Bay & Daniel, 2001; Clayson & Haley, 2015; Hennig-Thurau, Langer, & Hansen, 2001). This concept can be extended to emphasise a societal marketing orientation—namely that the institution exists to advance the long-term interests of the individual *and* society (Clayson & Haley, 2015; Maringe, 2011)—in which the student should be viewed as a citizen (Nordensvard, 2011). In the broader societal context, the student is one of a set of the university's stakeholders who are beneficiaries of higher education quality and with whom the institution maintains relationships, including parents, taxpayers, government, industry and alumni (Clayson & Haley, 2015; Maringe, 2011). This more holistic perspective foregrounds experiential learning, providing students with opportunities for exposure to the stakeholders with whom they will interact as graduates, and a more “empathetic understanding of long-term relationships, with far less emphasis on the ego driven ‘I’” (Clayson & Haley, 2015, p. 7).

While this review does not seek to settle the argument regarding the appropriateness of the student as consumer metaphor, it highlights the scope and prevalence of the literature surrounding this controversy as a means of underscoring the prominence of this new paradigm across the higher education sector. It is acknowledged that this shift in perspective results primarily from the neo-liberalisation of the sector by successive Western governments, the introduction of fees for education services, and society's increasing demand for educational credentials (Maringe, 2011; Nordensvard, 2011). Whilst these changes have resulted in a repositioning of philosophical motivations underpinning higher education, they have arguably been beneficial to learners, as the contemporary, student-centred paradigm has, at an undergraduate level, refocused on the scholarship of teaching (Boyer, 1990). By placing the student consumer at the heart of higher education decision-making, education is democratised, accountability is increased, and the quality of the higher education experience is enhanced (Maringe, 2011).

## **2.5 Customer-Based Brand Equity in Higher Education Environments**

Notwithstanding the controversy surrounding their use, service provider and consumer metaphors have become commonly used for higher education institutions and their students (Clayson & Haley, 2015; Maringe, 2011; Nguyen & Rosetti, 2013; Nordensvard, 2011). The adoption of commercial marketing terms and practices by the higher education sector has resulted from mounting competitive pressures faced by institutions including reduced government funding, increased international competition for students, and the entry of non-traditional online and private higher education providers (Molesworth et al., 2009). Furthermore, a shift in the motives of those seeking tertiary education has resulted in student "customers" pursuing tertiary qualifications for career outcomes as opposed to a desire for knowledge, with the consequence that education has become commodified and universities are seen as service providers (Molesworth et al., 2009). Because of these factors, higher education institutions seeking to achieve the objectives of differentiation and preference are increasingly drawing on services branding approaches from the corporate sector (Binsardi & Ekwulugo, 2003; Chapleo, 2015; Ivy, 2001; Mazzarol, 1998; Mazzarol & Soutar, 1999). Although services branding theory provides a strong foundation for the branding of higher education institutions, criticism of existing models suggests they may not account for the complexities associated with this sector (Baker et al., 2005; Christodoulides & De Chernatony, 2010), and a growing body of literature proposes the need for sector-specific CBBE frameworks to be developed (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Dennis et al., 2016; Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015).

Underpinning this call for sector-specific branding theory is the recognition that higher education is characterised by a unique combination of attributes that set it apart from other services. Firstly, it is dominated by both experience and credence attributes (Darbi & Karni, 1973; Girard & Dion, 2010; Nelson, 1970, 1974). Students evaluate education services for quality *during* consumption, whereas value is assessed *after* consumption once an attained qualification contributes to career outcomes (Binsardi & Ekwulugo, 2003). Secondly, contact between student and the higher education institution is intensive, occurring over a prolonged duration, and sustained effort and continued financial commitment are required on the part of the student (Chapleo, 2015; Hemsley-Brown & Oplatka, 2006). Thirdly, university brands and their service products are complex from a customer perspective. Not only are the institutions and their faculties and schools multi-faceted in nature (Waeraas & Solbaak, 2009), but the structure of higher education programs is also subject to a substantial degree of complexity, and the content is customised by the faculty involved in their delivery. Furthermore, individual student experience and outcomes can be highly variable, as the service depends on the customer (student) doing most of the work (Hemsley-Brown & Oplatka, 2006; Mazzarol & Soutar, 1999). Students effectively play a dual role in the service outcome, both as a productive resource through their intellect and communication skills, and by determining the level of effort they expend they are a contributor to value, satisfaction and quality (Ng & Forbes, 2009). As such, higher education brand meaning is constructed over time through the efforts of the student as they progress through different stages of study (Dennis et al., 2016).

As most higher education students do not progress to postgraduate study, a university degree is typically a one-off purchase, and selecting the right institution and program of study is a major life decision. Furthermore, as the process and outcomes of study can transform lives, there are strong links between higher education institution branding, emotional values, and related social accountability issues (Lowrie, 2007). Together, these factors expose higher education institutions to heightened customer-perceived risk (Binsardi & Ekwulugo, 2003).

The higher education branding literature recognises and considers these differentiating factors in proposing sector-specific theory. Much of the earlier research on the branding of higher education services does not directly address brand equity determinants, nor does it propose any institutional brand models. Instead it focuses on institutions' brand elements from the perspective of positioning or marketing, including areas such as: international higher education marketing (Mazzarol, 1998); the salience of positioning for promotional features (Gatfield, Barker, & Graham, 1999; Gray, Shyan Fam, & Llanes, 2003); factors influencing perceptions of higher education brand quality (Binsardi & Ekwulugo, 2003; Mazzarol & Soutar, 1999); considerations important to students' selection of a university (Ivy, 2008); and higher education institution visual brand identity (Bunzel, 2007; Jevons, 2006). Building on this earlier work, a

second wave of higher education brand literature incorporates both service branding and marketing concepts. Studies exemplifying this integrated approach have focused on areas including how higher education institution branding extends beyond the concept of the “promise delivered” because of its strong links to emotional values (Lowrie, 2007); the development of a university experience gap model focusing on experiential value creation and based on service quality literature (Ng & Forbes, 2009); and the criticality of the internal branding concept to ensuring the consistent expression of the higher education brand (Chapleo, 2010; Whisman, 2009).

Until recently little empirical research has been undertaken to identify the sources of brand equity for higher education institutions, or the dimensions of the higher education brand and their relationship to consumer response (Palacio, Meneses, & Perez, 2002). It is against the backdrop of the earlier contributions to higher education branding literature that researchers have more recently sought to develop brand models specific to the higher education context. This literature review proceeds to analyse and contrast eight such models. The empirical studies that support these models are all quantitative in nature and situated within the positivist paradigm. However, as the analysis will show, consensus among the studies is limited.

A high-level comparison of these differences in approach appears in Table 1 (below), and a more detailed comparison can be found in Appendix A. Because of the key role that *experience* plays in the development of service brand equity, the table compares eight higher education brand models according to the sample group’s stage of higher education institution brand experience, and the perspective each study takes on brand equity, such as brand identity or brand image.

Bennett and Ali-Choudhury’s (2009) study examines *prospective* students’ perceptions of university brands. Given the intangible nature of education services, they find that brand promise, or advertised brand covenant is the most powerful higher education brand dimension (Bennett & Ali-Choudhury, 2009). Within brand covenant, the usefulness of the qualification and career prospects have the greatest influence, followed by brand imagery representing the learning and social environment, and messaging around the quality of the learning experience (Bennett & Ali-Choudhury, 2009). Enduring brand identity, or quiddity, exerts the second highest influence in the formation of brand impression, and is most affected by: practicability factors, including entry requirements, program offerings, affordability and convenience; educational identity, incorporating prestige, faculty, completion rates and student demographics; and physical actualities, including location and facilities (Bennett & Ali-Choudhury, 2009). Lastly, the effects of promotional communications that carry the third-highest weighting and



dominate symbolic representation include: brand name, brand device, marketing communications and publicity (Bennett & Ali-Choudhury, 2009).

**Table 1. Comparison of Higher Education Branding Frameworks**

Author		Bennett and Ali-Choudhury (2009)	Aggarwal Sharma et al. (2013)	Mourad et al. (2011)	Pinar et al. (2014)	Vukasovic (2015)	Goi et al. (2014)	Dennis et al. (2016)	Khanna et al. (2014)
Brand Equity Perspective		Brand identity	Brand image	Brand image	Brand image	Brand image	Brand identity	Multi-perspectival	Brand touchpoint
Stage of Brand Experience	<b>Prospective Students</b>	Covenant Quiddity (functional performance) Symbolic & External Representations Conative Responses Cognitive Responses Affective Responses Reputational Consequences	Brand Awareness Brand Image - Brand Quality - Perceived ROI Brand Preference Willingness to Pay Premium Likelihood of Joining						Pre-Admission Touchpoints
	<b>Students</b>			Brand Awareness Brand Image	Core Dimensions Supporting Dimensions	Promotion Activities Brand Experience Service Attributes Symbolic Attributes Financial Attributes	Verbal Identity (brand hearsay) Visual Identity (brand evidence)	Perceived Quality Reputation Brand Image Brand Meaning Brand Identity	During Course Touchpoints
	<b>Graduates</b>							Attachment Strength Satisfaction Trust Commitment	Post-Passing Touchpoints
Other Influences									Influencing Touchpoints

The respondents' assessment of brand favourability in the Bennett and Ali-Choudhury (2009) study is linked to three constructs that reflect its consequences: affective responses, conative responses and reputational consequences. Of these, affective responses are found to be most influenced by brand covenant, followed by symbolic representation; conative responses are most affected by quiddity, followed by covenant; and reputational consequences are affected by all three independent variables to an approximately equivalent degree (Bennett & Ali-Choudhury, 2009). Whilst the model confirms that these consequences result from individuals' perceptions of the higher education institution brand, it does not consider that these might loop back into their overall brand assessment. Furthermore, as the study is restricted to three non-traditional universities in East London and has a limited sample size, the results are not

generalisable (Bennett & Ali-Choudhury, 2009). Lastly, because the sample is drawn only from prospective students, the study does not address the *experience* aspect of the higher education service brand that can only result from students having been exposed to and having consumed tertiary education services.

Aggarwal Sharma, Rao and Popli (2013) similarly examine the perspective of *prospective* students and focus on the cohort aspiring to join some of India's top business schools. The study takes an indirect approach to measuring CBBE and proposes brand equity measures related to the stages of hierarchy in the decision-making process. The model follows Aaker (1991) and Keller (1993) by measuring the effects of brand awareness, and perceived brand associations that are elements of brand image (Aggarwal Sharma et al., 2013). The brand image-related variables examined within the study are classified according to: customer perceptions of the nine quality attributes of quality, admission process rigor, intellectual capital, pedagogy, infrastructure, location, placements, industry integration, and global presence and recognition; overall brand assessment, including legacy, image and experiences; and perceived value for money or return on investment (ROI) (Aggarwal Sharma et al., 2013). Guided by Lavidge and Steiner's (1961) advertising effectiveness model, Aggarwal Sharma et al. (2013) include a measure of preference for an institution over a competing university brand. Via this mediating variable, they also account for the impacts of brand awareness and image on two dependent variables that are the outputs of brand equity—a student's willingness to pay a fee premium, and their likelihood of joining the institution if accepted (Aggarwal Sharma et al., 2013). The study confirms that while the brand awareness variable is significant, the image-related drivers exert a stronger effect on brand preference (Aggarwal Sharma et al., 2013). Together these factors constitute the overall brand equity of the business school, which can be measured through the behavioural outcomes of intention to join and willingness to pay a premium (Aggarwal Sharma et al., 2013). As the study draws on a relatively narrow sample, its generalisability is limited; furthermore, current students are not included in the study and the actual *experience* of the higher education service is not being measured (Aggarwal Sharma et al., 2013).

Given the dominance of both experience and credence attributes inherent in education services (Darbi & Karni, 1973; Girard & Dion, 2010; Nelson, 1970, 1974), Mourad, Ennew and Kortam (2011) better integrate perceptions of brand promise with actual experience by incorporating both *prospective and current students* perspectives in their study of the determinants of brand equity for both private and public higher education institutions in Egypt. Like Aggarwal Sharma et al. (2013), the Mourad et al. (2011) model is presented from the perspective of received brand *image*. Their model confirms the relevance of various symbolic, service and provider attributes across prospective and current student groups and identifies the factors that contribute positively

to higher education institution brand equity (Mourad et al., 2011). These factors include: *provider attributes* such as reputation, quality of faculty and trust relationships; the *service attributes* of quality, perceived product benefits, fees and graduate outcomes; and brand personality and social image, which are *symbolic attributes* (Mourad et al., 2011). Whilst there is some overlap with these and the brand equity drivers identified by Bennett and Ali-Choudhury (2009) and Aggarwal Sharma et al. (2013), their models and dimension categories differ widely. This primarily results from Mourad et al. (2011) directly measuring perceptions of *brand image*, and Aggarwal Sharma et al. (2013) measuring brand image via behavioural outcomes; whereas by contrast, Bennett and Ali-Choudhury (2009) examine projected *brand identity*.

In addition to the influence of the stage of study and level of student experience with their institution, brand equity determinants may also be affected by the psychographic profiles of students typically drawn to enrol in various disciplines, and the divergent benefits they seek from enrolling in a higher education program. Pinar et al. (2014) address these complexities by purposively targeting a sample that incorporates a cross-section of study levels and discipline areas at a Midwestern United States (U.S). university. Their model includes a classification based on earlier higher education branding literature (Gray et al., 2003; Ng & Forbes, 2009), which characterises the value-creating higher education brand dimensions as either core or supporting (Pinar et al., 2014). The results of their quantitative study suggest that the *core* brand equity dimensions perceived by university students to be the most influential are the quality of faculty, followed by the reputation of the university, the emotional environment, brand loyalty, and brand awareness (Pinar et al., 2014). These core dimensions of higher education brand equity align with the provider attribute findings in the Mourad et al. (2011) study. For those dimensions categorised as *supporting*, the most influential was found to be library services, followed by student living, then career development and physical facilities (Pinar et al., 2014). Whilst the physical facilities brand dimension is shared across other comparison studies (Goi et al., 2014; Khanna et al., 2014), as is career development (Bennett & Ali-Choudhury, 2009; Khanna et al., 2014; Mourad et al., 2011), Pinar et al. (2014) is the only study under comparison to identify library facilities or living environment as significant. This variance may result from on campus residence being more common in the U.S., and from the academic culture of the sample university. As the sample comprises students from only a single university, once more the results are not generalisable.

Vukasovic (2015) takes a similar approach to Mourad et al. (2011) with her study examining student-based brand equity from a brand image perspective. Drawn from a Slovenian context, the sample includes current university students; a group that is arguably in a strong position to evaluate the experienced brand against the promised brand. The quantitative inquiry focuses on

the drivers for university selection and builds on the constructs of Aaker (1991) and Keller (1993) in recognising brand awareness as a necessary precondition for the formation of brand-linked mental associations that collectively result in brand image (Vukasovic, 2015). As with Aggarwal Sharma et al. (2013), Vukasovic's (2015) results not only show that promotion activities are an important factor in consumers' awareness of the university brand, but that university brand equity is most significantly driven by *image*-related determinants. These image-related drivers come with actual consumer experience of the brand, and include the service attributes of: *perceived quality* of the education service, the range of courses, quality management and study method; *symbolic attributes* are expressed through brand personality, social image, innovation and faculty reputation; and *finance attributes* including relationship between quality and price, and the institution's financial stability (Vukasovic, 2015). Aside from generalisability issues relating to the small sample and single country context of the study, the usefulness of Vukasovic's (2015) model is limited from a university brand management perspective because it provides little detail of the underlying brand attributes contained within the identified dimensions.

The study undertaken by Goi, Goi and Wong (2014) focuses on the direct measurement of projected brand identity for higher education brands. Whereas Bennett and Ali-Choudhury (2009) measure prospective students' perceptions of the projected brand, Goi et al. (2014) consider the views of current students who have actual brand experience. The research is undertaken in the Malaysian higher education context, and as with Mourad et al. (2011) the sample group incorporates both private and public providers; however, Goi et al. (2014) also seek to identify any differences in brand identity across these institution types. To achieve this objective the authors develop their model constructs and scale based on extant services branding literature, and follow the categorisation schema provided by Bosch, Venter, Han and Boshoff (2006) to classify brand identity according to visual and verbal dimensions (Goi et al., 2014). The significant *visual* brand identity dimensions include product/core service, employee service, service facilities, employee development, culture and systems; whereas *verbal* identity dimensions found to be significant include promotion, word-of-mouth, PR and distribution channels (Goi et al., 2014). Whilst the results indicate some consistency with Bennett and Ali-Choudhury (2009) and Mourad et al. (2011), the most notable contribution made by this study is the identification of variances between students of private and public higher education institutions in their perceptions of brand identity. The findings suggest that the students of public higher education institutions place a greater emphasis on service facilities, employee training and qualifications; whereas employee service, core service, price and culture are areas of greater focus for students of private institutions (Goi et al., 2014). Further empirical testing is

needed to establish whether the specific aspects of brand identity attributed by Goi et al. (2014) to public and private institutions hold true outside the Malaysian context.

Dennis, Papagiannidis, Alamanos and Bourlakis (2016) propose a theoretical model in which higher education institution brand equity is measured indirectly through the outputs of student attachment to the university brand, and its antecedents of commitment, satisfaction and trust. The measurement of these outputs necessitates research among those experienced with university brands, and the sample includes both current students and recent graduates of universities in the U.S.. Drawing on Berry's (2000) service brand model, and on Jillapalli and Jillapalli's (2014) professor brand equity framework, the model represents the *process* through which higher education brand equity is created. It includes the dimensions of perceived quality and reputation, representing the pre-enrolment stage, and shows these independent variables to be critical precursors to building brand image, brand meaning or brand-student self-image congruence, and perceptions of institution-projected brand identity (Dennis et al., 2016). These variables are found to be moderated by consumers' experience of the higher education brand as they move through the student and graduate stages (Dennis et al., 2016). Of the three brand perspectives, brand meaning is found to be the main antecedent of brand attachment strength and, in turn, brand attachment positively affects brand trust and brand commitment (predominantly for recent graduates) (Dennis et al., 2016). Brand image is found to have a direct effect on satisfaction and trust, whereas brand identity positively affects satisfaction and trust; however, neither affects commitment (Dennis et al., 2016). The Dennis et al. (2016) theoretical model is useful for shedding light on the higher education institution brand equity creation process and foregrounds the need for institutions to focus on brand building activities that result in brand satisfaction and trust for current students, and brand commitment with graduates. However, despite the model's complexity, it yields little practical insight for institution brand managers into the attributes that contribute positively to perceived brand quality, reputation, image, meaning or identity, as the study does not include a comprehensive exploration of the factors driving these perceptions. Furthermore, although the Dennis et al. (2016) model is empirically tested, the structure of the model appears to be at odds with the widely accepted CBBE theory. The Dennis et al. (2016) model incorporates dimensions of perceived quality and reputation that *precede* brand identity, image and meaning, whereas earlier models presented by Erdem and Swait (1998), Berry (2000) and Keller (2001) indicate that brand identity precedes brand image, and brand meaning, perceptions of quality and reputation are components of the latter. Similarly, Dennis et al. (2016) suggest that attachment strength precedes satisfaction, trust and commitment; whereas Erdem and Swait (1998) and Keller (2001) suggest the loyal customer-brand relationship results from satisfaction and trust, and attachment is arguably a component of commitment.

From a student perspective, the individual dimensions of a university brand have varying relevance at different stages of the study lifecycle, as they progress from prospective student, to student, to graduate. Drawing on the Brand Touchpoint Wheel (Davis & Dunn, 2003), the Khanna, Jacob and Yadav (2014) framework presents the dimensions required for building a strong, experiential higher education brand. These dimensions are classified according to four touchpoint groups: sources of pre-admission knowledge; during course; post-passing; and influencing (Khanna et al., 2014). The sample incorporates students from several Mumbai management schools who are at different stages in their study, as well as alumni of these institutions (Khanna et al., 2014). The findings indicate that differing emphases are placed across the range of brand equity drivers according to the stage of a consumer's engagement with the higher education institution brand (Khanna et al., 2014). Because of the intangibility of higher education, the prospective student subjects attributed greater importance to pre-admission information, including placement opportunities and the institution's physical facilities (Khanna et al., 2014). This finding is consistent with Bennett and Ali-Choudhury's (2009) study, which features these two elements in brand promise. For students in the early stages of their studies, drivers of brand equity are orientation, teaching and learning support, and counselling; however, as these students progress through their studies the active learning and the co-creation of knowledge with peers and industry become the more prominent drivers of brand equity (Khanna et al., 2014). For graduates, the amplification of alumni achievements and career growth support help sustain ongoing relationships that loop back and continue to nourish brand reputation (Khanna et al., 2014). External touchpoints that influence student consumer decisions throughout the lifecycle include perceptions of external stakeholders, regulators and agencies, and perceived innovation in research (Khanna et al., 2014). Although the Khanna et al. (2014) model is useful for identifying the different ways higher education brands interact with students across time, the content validity of the questionnaire and resulting touchpoint component list could be brought into question. For example: little emphasis is placed on the influence of university promotional activities in the pre-admission phase; facilities do not appear to have a bearing during the period students are engaged in study; and career growth following graduation is included as a touchpoint when it is arguably a consequence (Khanna et al., 2014). Furthermore, although the components identified in the Khanna et al. (2014) model may well contribute to brand strength, it should be considered that Davis and Dunn (2003) intended the Brand Touchpoint Wheel as a tool for the operationalisation of brand strategy, rather than measurement of brand equity. The components identified by Khanna et al. (2014) are constituents of phases in time, as opposed to any of the dimensions of brand that are prevalent in the literature; as such, it is noted that CBBE may not actually be measured in this study.

## **2.6 Research Issues and Theoretical Framework**

### **2.6.1 Literature Gaps, Research Problem and Questions**

This section of the literature review summarises the theory examined in the preceding sections. It highlights the gaps and controversies present in the literature, and presents the research problem and related questions based on these issues.

Over the past 25 years the concept of brand equity has become fundamental to the measurement of firms' competitive position and comprehension of the holistic impacts of marketing strategy (Reynolds & Phillips, 2005). Whilst financial measures of brand equity reflect past activity and have a typically short-term horizon, the measurement of intangible, market-based assets provide a fuller understanding of marketing performance and provide insights into sustainable competitive advantage and longer-range outcomes (Ambler, 2003). Measures to capture the drivers of brand equity have therefore become commonplace market performance indicators (Ambler, 2003).

The dominant streams of CBBE theory have largely been derived either from the work of Aaker (1991) and Keller (1993), grounded in cognitive psychology and based on memory structure, or the information economics-based theory of Erdem and Swait (1998). The earlier CBBE research focuses predominantly on fast-moving consumer goods (Leuthesser et al., 1995; Park & Srinivasan, 1994; Yoo & Donthu, 2001). While Keller (2001) later proposed a CBBE pyramid model intended to represent both product and service brands, the recognition that services are differentiated from goods by their intangibility, inseparability, heterogeneity and perishability (Zeithaml, 1981), resulted in the emergence of a body of work in the first decade of the 21st century specifically to address CBBE in services (Berry, 2000; de Chernatony & Segal-Horn, 2003; Grace & O'Cass, 2005). As the literature is wide-ranging, disagreement also remains over how CBBE should be measured. Several earlier studies attempt direct measurement approaches (Leuthesser et al., 1995; Park & Srinivasan, 1994; Swait et al., 1993), while later work advocates a proliferation of indirect measurement methodologies (Ailawadi et al., 2003; Netemeyer et al., 2004; Yoo & Donthu, 2001). In view of these varying perspectives, Christodoulides and de Chernatony (2010) posit that any universal measure of CBBE may be akin to "fool's gold" (p. 61). This position accepts that customer value is contextual and the measurement of CBBE needs to account for the particular sector, category and position of the given brand (Christodoulides & De Chernatony, 2010).

Recognising the need for the key variables of brand sector and category to be reflected in CBBE models, a strand of literature has recently emerged addressing the particulars of the higher

education sector. Aside from the specific attributes of education services, these studies account to varying degrees for factors such as: the sector's experience and credence dominance (Darbi & Karni, 1973; Girard & Dion, 2010; Nelson, 1970, 1974); the transformative nature of education (Lowrie, 2007); the intensive relationship between student and institution that requires sustained effort and financial commitment (Chapleo, 2015; Hemsley-Brown & Oplatka, 2006); the construction of brand meaning by the student as they progress through different stages of experience; and the heightened presence of customer-perceived risk associated with higher education products (Binsardi & Ekwulugo, 2003).

This review has examined eight studies in the emerging field of customer-based brand frameworks specific to the higher education sector. As they are typically confined to a single institution or a limited range of institutions within a single country, the sampling frames can be characterised as narrow and the studies described as exploratory in nature. Whilst individually the results of these studies cannot be generalised, any congruity among them could point to brand equity dimensions and attributes likely to be common across higher education contexts. However, a comparison of these models generally reveals a deficit of consensus on the process and drivers underlying higher education brand equity creation. Although some overlap between models can be found at the brand attribute level, the lack of parity is particularly evident across brand dimensions. This lack of agreement comes about as the result of divergent theoretical origins, measurement approaches, and the varying levels of brand experience across the sample groups. Furthermore, considering that brand experience is key for service brands, that the relationship between customers and service brands is recognised to evolve over time (Berry, 2000; Brodie, 2009; de Chernatony & Segal-Horn, 2003), and that the student relationship with higher education brands develops over a particularly extended period, any comparison of the higher education brand equity studies under review is additionally confounded by differences in the stage of brand experience at which the sample is taken across prospective student, current student and graduate groups (Table 1).

Both the Bennett and Ali-Choudhury (2009) and Aggarwal Sharma et al. (2013) studies incorporate only prospective students in their sample. By incorporating the dimensions of brand promise, brand identity and symbolic representation, Bennett and Ali-Choudhury (2009) include factors identified as specific to services; conversely, the Aggarwal Sharma et al. (2013) model has its theoretical origins in the earlier brand equity literature of Aaker (1991) and Keller (1993), more typically associated with consumer goods. It indirectly measures brand image via a process model that considers the effects of brand awareness, perceived brand quality, perceived ROI, brand preference on the outputs of willingness to pay a price premium, and likelihood of joining (Aggarwal Sharma et al., 2013). Mourad et al. (2011) similarly refer to



Aaker (1991) and Keller (1993) in the development of their model that measures higher education brand awareness and brand image; however, they do consider the importance of service brand experience by including prospective *and* current students in their sample.

The Pinar et al. (2014) and Vukasovic (2015) studies both measure brand image using a sample comprising only of current students; however, the results of the two studies cannot be directly compared because of the widely differing attributes and dimensions the studies incorporate. Pinar et al. (2014) categorise brand attributes derived from the higher education branding literature under two new dimensions—core and supporting—while Vukasovic (2015), following Aaker (1991) and Keller (1993), categorises brand equity dimensions according to brand awareness (perceptions towards promotion activities), and brand image (service product attributes, symbolic attributes and financial attributes). Although Goi et al. (2014) also draw on a current student sample, they examine student perceptions of projected brand identity rather than brand image. Their model does, however, benefit from being one of the few based on constructs drawn specifically from the services branding literature (Goi et al., 2014).

Having a focus both on brand experience and brand credence, Dennis et al. (2016) sample both current students and graduates to examine the brand equity creation *process* using a multi-perspectival approach that combines aspects of Berry's (2000) services branding model and Jillapalli and Jillapalli's (2014) professor brand equity framework. The process model considers the effects of brand image, brand meaning and brand identity on brand equity via satisfaction, trust and commitment; however, the model is not coupled with any comprehensive inventory of the attributes that underlie its dimensions (Dennis et al., 2016). Lastly, with its roots in the Brand Touchpoint Wheel (Davis & Dunn, 2003), the Khanna et al. (2014) model provides a range of brand building interaction points across the student lifecycle from pre-enrolment through to graduation.

Comparing the higher education institution brand models from the perspective of their component dimensions and attributes, it is evident that the range of value drivers they incorporate also vary in emphasis (Appendix A). The attributes presented by Khanna et al. (2014) have a functional focus; whereas the outputs incorporated by Dennis et al. (2016) and the attributes considered by Pinar et al. (2014) are more emotional in nature. The Goi et al. (2014) attributes have a cultural inclination, whilst those included by Bennett and Ali-Choudhury (2009), Aggarwal Sharma et al. (2013) and Vukasovic (2015) can be characterised as values-based. This diverse range of attributes and varying attribute emphases in the reviewed models further confounds any comparison, suggesting that none of them presents the complete scope of factors driving CBBE for higher education institution brands.

Furthermore, the dimensional structures within several of the models limit any understanding of the *process* of brand value or equity creation, as the impacts of observable attributes and dimensions on customer-perceived value are directly measured without consideration of possible latent, mediating variables or their resulting outputs (Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015). Among the studies proposing a process model are Bennett and Ali-Choudhury (2009), Dennis et al. (2016) and Aggarwal Sharma et al. (2013). Bennett and Ali-Choudhury (2009) consider the effect of brand covenant, brand quiddity and symbolic representation on perceived university brand equity, and its resulting consequences for affective response, conative response and reputation. Aggarwal Sharma et al. (2013) consider that brand equity creation is a consequence of the effects of brand awareness, quality perceptions, brand assessments, and perceived ROI, and that brand equity can be indirectly measured via the outputs of willingness to pay a price premium and intention to join. However, by sampling only prospective students, neither study addresses the experiential nature of the customer-brand relationship foregrounded by Berry (2000) as critical for service brand equity. While Dennis et al. (2016) explore the higher education institution brand equity creation process for current students and graduates, their study fails to provide any comprehensive inventory of the attributes that underpin the key process dimensions and drive positive equity. It is therefore of little practical assistance to brand managers wishing to diagnose the relative efficacy of attributes on the brand equity creation process at their institutions.

Notwithstanding the aforementioned limitations of these studies and that the scope of included brand attributes may not be complete, the benefit provided by the Bennett and Ali-Choudhury (2009), Mourad et al. (2011), and Pinar et al. (2014) models lies in their inclusion of scales that provide a practical mechanism for the measurement of the performance of a specific range of brand attributes. The scales allow the relative influence of the models' attributes on perceived brand value to be measured via broader dimensional categories, providing insights crucial to the development of evidence-based brand strategy for the institutions conducting research using these models (Bennett & Ali-Choudhury, 2009; Mourad et al., 2011; Pinar et al., 2014). For higher education institutions seeking to develop brand strategy informed by empirical data, it is essential to understand the respective contribution of each brand equity attribute to the value of their brands.

Lastly, it is relevant to note that while each of the eight higher education brand frameworks examined has strong theoretical foundations, each study proposes a new structural model that is a departure from those found in the service brand literature (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Dennis et al., 2016; Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015). Given that higher education can be

considered a constituent of the service sector, it can be questioned whether it is necessary for a CBBE process model for universities to be substantially different from those developed for service industries more broadly. If industry-specific attributes are accounted for, could an existing service brand equity structural model be adapted for use in higher education?

In consideration of the controversies and deficiencies identified within the extant higher education brand equity literature, the gaps needing to be addressed can be summarised by the following research problem.

*What are the attributes and dimensions that influence student perceptions of Australian university brands, and what is the process of customer-based brand equity creation in this higher education context? How does this compare with other service industries?*

This research problem can be articulated in terms of the following three research questions.

*RQ1. Which university brand attributes are meaningful to students?*

*RQ2. What is the relative influence of the attributes and dimensions of the university brand on perceived brand favourability, and how does this compare with other services?*

*RQ3. Is the process through which students develop loyalty towards university brands the same as for other services?*

## **2.6.2 Conceptual Model and Hypotheses**

### *2.6.2.1 Approach and Model Origins*

This section proposes a conceptual model to address the research problem and questions and articulates the associated hypotheses being empirically tested in this study. Rather than proposing another brand equity model for the higher education sector and further confound the already contradictory body of literature, this study will examine whether it is possible to present a solution to the research problem and questions by adapting an existing services branding model for the higher education context. This approach will not only build on the existing body of empirically tested and peer reviewed work, but by demonstrating the application of an existing service brand model to the higher education sector, it will increase the model's generalisability and enhance understanding of the model and its constructs (Tabak et al., 2012). Furthermore, the application of a model conceptualised specifically for the *services sector* will account for the intangibility, inseparability, heterogeneity and perishability that distinguish services from goods (Zeithaml, 1981), and are also applicable in the higher education services setting.

In seeking to address the research problem and questions by adapting an existing predictive model for service brands, it is posited that, as an experiential service, the *process* through which favourable perceptions of higher education brands are formed should align with that of other services. The study simultaneously aims to answer the question of whether higher education institution brand attributes differ from those of other services, and to measure the relative influence of these attributes on student perceptions. A mapping of attributes between models (Table 3) ensures the inventory of brand drivers found in the extant higher education branding models are considered in the service brand model selected for this study. It is proposed that any differences between the attributes found in the selected service brand model and those typically incorporated in the reviewed higher education studies can be accommodated through minor adaptation and re-contextualisation of descriptors found in the measurement scales. This approach minimises any structural alteration of the model, and potential for negatively impacting its integrity (Tabak et al., 2012).

The higher education brand model presented in this study is based upon the dimensional categorisations and structural approach originally proposed in the Grace and O'Cass (2005) Service Brand Verdict (SBV) model, and subsequently adapted by Pillossof et al. (2009) and by Krystallis and Chrysochou (2014) as the Service Brand Loyalty (SBL) model. Supporting the original Grace and O'Cass (2005) model are a range of subsequent studies that refer to it. An Internet search reveals that latent constructs and indicators found in Grace and O'Cass (2005) are referenced in over 200 studies, either being integrated into new structural models (Jeon, 2009), or key elements from it are referenced in other studies (Hsin & Chen, 2008; Martínez-Ruiz, Jiménez-Zarco, & Izquierdo-Yusta, 2010; Sok & O'Cass, 2011; Warren, 2011; Xi, 2011). The Pillossof et al. (2009), Krystallis and Chrysochou (2014) empirical studies utilise the original model almost in its entirety, with only minimal adaptations for different service industries and cultural contexts, and a strengthening of the dependent construct that describes ongoing brand loyalty, as opposed to brand verdict. The approach taken in these studies (Krystallis & Chrysochou, 2014; Pillossof et al., 2009) provides support for Grace and O'Cass's (2005) theoretical model and extends its applicability across service sectors and cultures.

Of the services branding models considered as possibilities, these SBV (Grace & O'Cass, 2005) and SBL (Krystallis & Chrysochou, 2014; Pillossof et al., 2009) models provide the most holistic solution to the gaps identified in the education branding literature. Unlike Berry's (2000) service branding model that was purely conceptual in nature, the SBV model has been empirically tested in retail and banking (Grace & O'Cass, 2005), while the SBL model has been tested in the airline and banking industries (Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Furthermore, where some exploratory service brand studies use brand experts as their sample group (de Chernatony & Dall'Olmo Riley, 1999; de Chernatony & Segal-Horn, 2003),

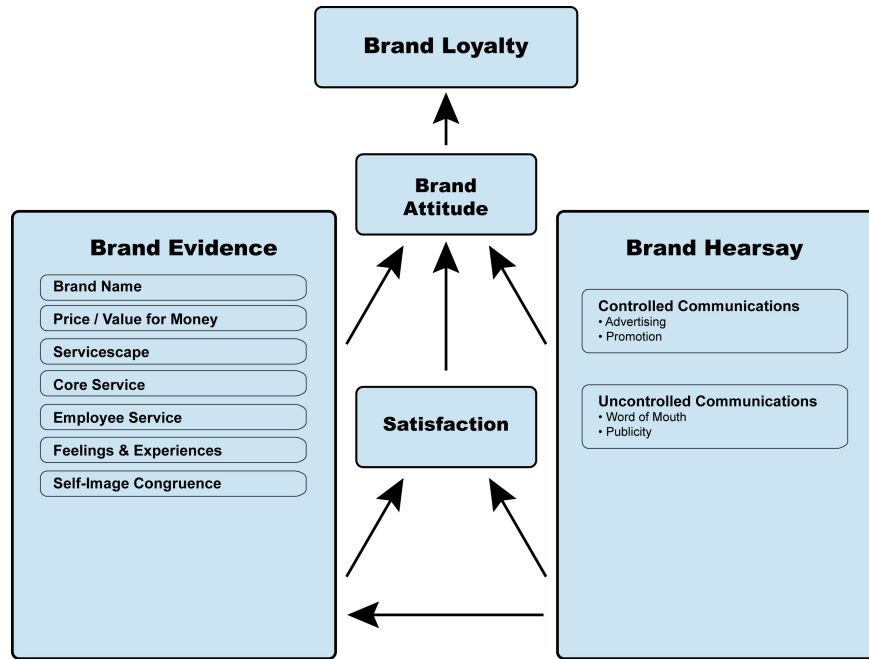
the SVB and SBL models critically consider the service brand from a *customer* perspective (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Although Brodie et al. (2009), like Grace and O'Cass (2005), offer an empirically tested explanation for the *process* by which customer perceptions are created for service brands, the SBV model (Grace & O'Cass, 2005) has the added advantage of providing a mechanism for the measurement of the relative influence of service brand drivers.

In the original model, the consumer's ultimate response to the service brand is characterised as brand verdict, being their actionable response to the brand stimuli and final decision regarding future patronage (Grace & O'Cass, 2005). However, the adaptations made to Grace and O'Cass's (2005) SBV model in two subsequent studies see *brand verdict* substituted for *brand loyalty* (Krystallis & Chrysochou, 2014; Pillossof et al., 2009). This change is made on the basis that *brand loyalty* represents a more than mere purchase intention as it is a deeply held commitment through which brand switching is typically resisted, and leads to repeat sales, positive word-of-mouth and greater profitability (Krystallis & Chrysochou, 2014; Pillossof et al., 2009). This adaptation does not change the fundamental structure of the Grace and O'Cass (2005) model; rather, in the context of services that depend on repeat or sustained custom, the change is an enhancement or strengthening of the outcome variable that is the ultimate service brand response.

The concept of brand loyalty as the ultimate response to brand evaluation and disposition aligns with the perspectives of several authors (Chaudhuri & Holbrook, 2001; Dick & Basu, 1994; Keller, 2001) and is further justified in the theory. Keller (2001) theorises that brand resonance, the ultimate relationship or level of identification that the customer has with the brand, comprises four categories. Behavioural loyalty is evidenced by continued brand patronage; attitudinal attachment goes beyond having a positive brand attitude to having a strong personal brand attachment; a sense of community, engenders feelings of affiliation or kinship with others associated with the brand; and active, ongoing brand engagement is demonstrated through actions such as choosing to join a brand club, receiving updates, or becoming a brand ambassador (Keller, 2001). Oliver (1999) proposes that brand loyalty reduces switching behaviours; Yoo, Donthu and Lee (2000) find brand loyalty has a strong effect on brand equity as indicated through the ability to charge a price premium or having greater market share; and Caruana (2002) suggests brand loyalty has a positive impact on firm performance. Given that higher education services typically involve a sustained relationship between a student and single institution over multiple years, and that graduates will ideally continue to engage with and act as ambassadors for their institution, it can be argued that a more deeply held commitment, or loyalty is required of higher education students than of customers of services such as retail or leisure, where patronage is intermittent and not limited to a single brand. Considering these

factors, the notion of brand loyalty, rather than mere purchase intent, seems a more fitting goal for universities wishing to retain and graduate their students and to continue a lifelong engagement with their alumni. Accordingly, by incorporating the *brand loyalty* construct, this study adapts the SBL models of Pillossof et al. (2009) and Krystallis and Chrysochou (2014) to address the research problem and answer the research questions.

**Figure 1: Service Brand Loyalty Model**



Adapted from Grace and O’Cass (2005), Pillossof et al., (2009);  
and Krystallis and Chrysochou (2014).

In their original study, Grace and O’Cass (2005) confirm the hypothesised relationships between the five key constructs—*brand hearsay*, *brand evidence*, *satisfaction*, *brand attitude*, and *brand verdict*—that articulate the process through which a final brand judgement is reached. The latter construct is subsequently replaced by *brand loyalty* (Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Definitions for the model constructs can be found in Table 2. The structural models from all three studies show the dependent endogenous constructs—either *brand verdict* or *brand loyalty*—to be affected by *brand attitude*, for which *satisfaction*, *brand evidence*, and *brand hearsay* are antecedents. Additionally, a direct relationship exists between *brand hearsay* and the exogenous latent variable *brand evidence*, as well as between each of these constructs and *satisfaction* (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). The models incorporate outer measurement models,

which include formative and reflective components (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Formative constructs arise when causality flows from several indicators to a latent construct and there is no assumption regarding inter-correlation patterns between these indicators (Coltman, Devinney, Midgley, & Venaik, 2008; Hair et al., 2014). Reflective constructs are those for which changes in the latent construct give rise to changes in the underlying indicators (Coltman et al., 2008; Hair et al., 2014). Within the SBV and SBL models, *satisfaction*, *brand attitude*, and *brand verdict* or *brand loyalty* are first order reflective constructs; whereas *brand hearsay* and *brand evidence* are second order formative constructs operationalised by the first order indicators that underlie them (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). In a model of this nature, the observables (or service brand dimensions including brand name, price, core service and employee service) measure different attributes of the latent constructs and exert varying influence on the unobservable latent variables. In other words, it is the variance between them that is measured, and they are not expected to correlate or share a common theme (Jarvis et al., 2003; Kadipasaoglu, Peixoto, & Khumawala, 1999). This provides some flexibility on the range of indicators that might be included in such a model.

**Table 2. Definitions for the Key Inner Model SBL Constructs**

Construct	Definition
<b>Brand Evidence</b>	The range of associations held in the mind of the consumer regarding the dimensions of the brand experienced both prior to purchase and during consumption of the service. <i>Brand Evidence</i> associations are categorised as <i>brand name</i> , <i>price</i> , <i>servicescape</i> , <i>core service</i> , <i>employee service</i> , the <i>feelings</i> aroused by the service, and <i>self-image congruence</i> .
<b>Brand Hearsay</b>	<i>Brand Hearsay</i> incorporates all communications the consumer receives about the brand during the pre-purchase decision stage, including controlled marketing efforts, and uncontrolled publicity and word-of-mouth communications.
<b>Satisfaction</b>	<i>Satisfaction</i> is the consumer’s immediate response, either positive or negative, to the brand’s perceived service performance, resulting from confirmed or disconfirmed pre-purchase expectations.
<b>Brand Attitude</b>	<i>Brand attitude</i> is the consumer’s either positive or negative disposition with the service brand. It is a global assessment resulting from their perceived satisfaction with all brand stimuli.
<b>Brand Loyalty</b>	Having evaluated the brand, <i>Brand Loyalty</i> is the consumer’s ultimate brand response in the form of a deeply held commitment to continue its patronage, and to recommend the service brand to others despite any factors, such as competitor marketing efforts, that have the potential to influence brand switching.

Adapted from Grace and O’Cass (2005), Pillossof et al., (2009);  
and Krystallis and Chrysochou (2014).

#### 2.6.2.2 Adaptation of the Measurement Model

In the source models, the content pertaining to the sector-specific service brand attributes resides primarily with the observable indicators belonging to the first order reflective constructs that inform the second order formative constructs *brand hearsay* and *brand evidence* (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Therefore, these outer model indicators are the primary focus for any adaptation required to fit this study’s higher education context.

Just as Grace and O’Cass (2005) refer to the service branding literature to ascertain the dimensions of the service brand included in their original model, a systematic review of the higher education brand equity literature has been undertaken to derive an inventory of brand equity drivers relevant to this sector. A mapping of these higher education brand attributes against the original model constructs (Grace & O’Cass, 2005) has informed the required adaptations.

Table 3 below lists the inventory of identified higher education brand attributes, mapped against the first order *brand hearsay* and *brand evidence* constructs drawn from the original SVB model (Grace & O’Cass, 2005). A complete listing of brand drivers by higher education brand study can be found in Appendix A.

In the following paragraphs the theoretical underpinnings for the *brand hearsay* and *brand evidence* constructs and their related attributes are examined, providing a rationale for their inclusion by Grace and O’Cass (2005) in the original model. By reference to the higher education brand literature and the mapping provided in Table 3, a justification is also provided for the retention of these attributes in the adapted model used in the higher education context of the current study.

The construct referred to by Grace and O’Cass (2005) as *brand hearsay* draws on Keller (2001) by broadly encapsulating the elements of brand identity that underpin brand awareness and influence the formation and strength of the associations that make up brand image and give it meaning. For Grace and O’Cass (2005), the *brand hearsay* construct incorporates “all communications ... regarding the services that are experienced by consumers” (p. 129). This conceptualisation also aligns with Berry (2000) in that it incorporates presented brand communications such as paid advertising and uncontrolled communications, including publicity and word-of-mouth originating from external sources. While paid advertising plays a role in affecting attitudes, perceptions and intentions (Kempf & Smith, 1998) and can relieve risk by providing vital pre-purchase information for intangible services (Stáfford & Day, 1995), word-of-mouth and publicity are seen by customers as credible sources that carry particular weight in



the pre-purchase evaluation of services (Ahluwalia, Burnkrant, & Unnava, 2000; Berry, 2000; Mangold, Miller, & Brockway, 1999).

**Table 3. Mapping: Higher Education Brand Model Attributes to SBV Model Attributes**

Grace and O’Cass (2005)		Higher Education Branding Literature Brand Attributes and Sources	
Second Order Formative Constructs (Dimensions)	First Order Reflective Construct (Attributes)	Related Constructs Drawn from Higher Education Brand Models	Sources
Brand Hearsay	Controlled Communications	Marketing and Communications	Bennett & Ali Choudhury (2009); Goi et al. (2014); Mourad et al. (2011); Vukasovic (2015)
	Uncontrolled Communications	Word-of-Mouth	Goi et al. (2014); Khanna et al. (2014); Mourad et al. (2011)
		Publicity	Goi et al. (2014); Khanna et al. (2014)
		Reputation / Stakeholder Perceptions / Public or Social Image	Aggarwal Sharma et al. (2013); Bennett & Ali Choudhury (2009); Dennis et al. (2016); Khanna et al. (2014); Mourad et al. (2011); Pinar et al. (2014); Vukasovic (2015)
Brand Evidence	Brand Name		Bennett & Ali Choudhury (2009); Goi et al. (2014)
	Price / Value for Money / Willingness to Pay a Premium		Bennett & Ali Choudhury (2009); Goi et al. (2014); Khanna et al. (2014); Mourad et al. (2011); Vukasovic (2015)
			Aggarwal Sharma et al. (2013)
	Servicescape	Physical Facilities / Technological Facilities / Library Facilities / Student Living	Aggarwal Sharma et al. (2013); Bennett & Ali-Choudhury (2009); Goi et al. (2014); Khanna et al. (2014); Pinar et al. (2014)
		Location	Aggarwal Sharma et al. (2013); Bennett & Ali-Choudhury (2009); Khanna et al. (2014); Mourad et al. (2011)
	Core Service	Core Product / Service	Goi et al. (2014)
		System / process	Goi et al. (2014)
		Range of Courses	Vukasovic (2015)
		Academic Standards	Pinar et al. (2014)
		Pedagogy	Aggarwal Sharma et al. (2013); Khanna et al. (2014); Vukasovic (2015)
		Knowledge Enhancement	Aggarwal Sharma et al. (2013); Khanna et al. (2014)
		Support Services	Bennett & Ali-Choudhury (2009); Pinar et al. (2014)
		Industry Integration	Khanna et al. (2014)
		Graduation / Career Prospects	Aggarwal Sharma et al. (2013); Bennett & Ali-Choudhury (2009); Khanna et al. (2014); Pinar et al. (2014)
	Employee Service	Employee Service	Goi et al. (2014)
		Calibre of Faculty / Intellectual Capital	Aggarwal Sharma et al. (2013); Bennett & Ali-Choudhury (2009); Khanna et al. (2014); Mourad et al. (2011); Pinar et al. (2014); Vukasovic (2015)
	Feelings	Emotional Environment	Pinar et al. (2014)
		Affective Responses	Bennett & Ali-Choudhury (2009)
	Self-Image Congruence	Composition of the Student Body	Bennett & Ali-Choudhury (2009);
		Brand personality, social image, positioning	Mourad et al. (2011); Vukasovic (2015)
		Self-image congruence	Dennis et al. (2016)

The comparison in Table 3 shows nearly all reviewed higher education brand models incorporate drivers related to *brand hearsay*. Half of the studies refer to some form of controlled communications (Bennett & Ali-Choudhury, 2009; Goi et al., 2014; Mourad et al., 2011;

Vukasovic, 2015), whilst uncontrolled communications are mentioned in terms of word-of-mouth (Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011) and publicity (Goi et al., 2014; Khanna et al., 2014). Furthermore, it is noted that reputation, social image or stakeholder perceptions are found to be significant brand drivers in seven of the eight higher education studies (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Dennis et al., 2016; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015). Corporate reputation management activities are largely considered to be a communications function (Hutton, Goodman, Alexander, & Genest, 2001). Controlled communication message channels are a factor in corporate reputation, as are uncontrolled, interpersonal and intrapersonal channels through which distracting noise or feedback about how others view the organisation are communicated (Balmer & Greyser, 2002; Carroll, 2013). Because corporate or institutional reputation derives from a hybrid of controlled and uncontrolled sources, it arguably is already incorporated within the controlled and uncontrolled communication constructs and can be mapped to the existing *brand hearsay* indicators.

The *brand evidence* construct, defined by Grace and O'Cass (2005) as the "set of service brand associations experienced by the consumer during the pre-purchase and consumption stage" (p. 127), comprises seven indicators: *brand name*, *price/value for money*, *servicescape*, *core service*, *employee service*, *self-image congruence* and *feelings*. These *brand evidence* attributes align well with Keller's (2001) definition of brand meaning and the elements through which it is established. Formed through direct experience with the brand, as well as being influenced indirectly by *brand hearsay*, the attributes are both functional or performance-related integrating concepts of core service, service effectiveness, efficiency, empathy, and price; as well as being abstract and imagery-related such incorporating notions of heritage and history associated with the brand name, brand personality, user profiles, and experiences (Keller, 2001).

The seven *brand evidence* attributes are evaluated by consumers either before or during service delivery. During the pre-purchase stage, consumers are able to evaluate service *brand evidence* through its known or tangible attributes. For example, *brand name* is not only important for brand awareness and recall (Keller, 1993) but can act as a surrogate for absent attribute information for intangible products, reducing perceived risk (de Chernatony & Dall'Olmo Riley, 1999; Degeratu, Rangaswamy, & Wu, 2000). *Price* is also more than what is sacrificed to obtain a service, and is inherently a signal for value, being a tradeoff between monetary outlay and quality (Dodds, Monroe, & Grewal, 1991; Sweeney & Soutar, 2001). The *brand name* attribute is retained for the current study as it is similarly incorporated into both higher education brand models that take a brand identity approach (Bennett & Ali-Choudhury, 2009; Goi et al., 2014). These studies directly list the institution's brand name and logo as key components of the presented brand (Bennett & Ali-Choudhury, 2009; Goi et al., 2014). As

direct mention is made of price or value for money within five of the eight higher education brand studies reviewed (Bennett & Ali-Choudhury, 2009; Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Vukasovic, 2015), with a sixth study (Aggarwal Sharma et al., 2013) referring to the related concept of willingness to pay a price premium, the *price* attribute is similarly retained.

Physical evidence found in the *servicescape* is also a key component of the service firm's presented brand (Berry, 2000) and has been found to affect consumer response (Chang, 2000). By acting as a visual metaphor for the entire intangible service (Bitner, 1992), it provides clues prior to consumption, and continues to be experienced and evaluated during service consumption. The servicescape is similarly a key feature of the education service environment, and elements such as physical and technological facilities, library, and student living and location are present in six of the higher education brand models reviewed in this chapter (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014).

Although customers continue to evaluate *brand evidence* attributes such as *brand name*, *price* value and the *servicescape* as the service is being delivered, it is only during service consumption that they are able to evaluate the experienced *core service*, or structural content and process, alongside *employee service*, being the performance and behaviours of employees integral to the service delivery (Grace & O'Cass, 2005). Accordingly, these key elements of service brand evidence are found in several of the reviewed higher education brand models. While the Goi et al. (2014) model directly incorporates core service and system process attributes, other models refer to elements that make up the core service such as the range of courses (Vukasovic, 2015), academic standards (Pinar et al., 2014), pedagogy (Aggarwal Sharma et al., 2013; Khanna et al., 2014; Vukasovic, 2015), knowledge enhancement (Aggarwal Sharma et al., 2013; Khanna et al., 2014), and support services (Bennett & Ali-Choudhury, 2009; Pinar et al., 2014). Because of the intangibility and simultaneity of services, perceptions of *employee services* are closely tied to perceptions of service quality and are a determinant of future service consumption (Grace & O'Cass, 2005). Recognising the criticality of positively perceived employee services to favourable perceptions of university brands, most of the reviewed higher education studies either incorporate employee service or an equivalent such as calibre of faculty or intellectual capital within their models (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015).

Keller (1998) provides inspiration for the inclusion of the *self-image congruence* attribute in Grace and O'Cass' (2005) model. The concept of self-image congruence relates to the brand

personality reflected in communications via the image of the stereotypical user, situational usage imagery, and encounters with actual brand users which influence consumer perceptions about the type of person who uses the service and the context of use (Keller, 1998). Consumers, motivated by a desire to promote self-consistency and self-esteem, evaluate a brand positively where the brand personality and user imagery are congruent with their actual or ideal self (Aaker, 1999; Sirgy, 1982; Sirgy et al., 1997). The notion of self-image congruence is additionally present in several of the reviewed higher education brand models, either being directly addressed (Dennis et al., 2016), or represented through related concepts such as the composition of the student body (Bennett & Ali-Choudhury, 2009), brand personality and social image (Mourad et al., 2011; Vukasovic, 2015). *Self-image congruence* was therefore retained in the model adapted for the higher education context.

Finally, the *feelings* construct which appears in the adapted model was originally incorporated in the Grace and O'Cass (2005) framework as an important non-product-related *brand evidence* attribute which, when aroused by the service, can have a significant impact on consumer evaluations (Babin & Babin, 2001). Affective responses are also incorporated within the Bennett & Ali-Choudhury (2009) higher education brand model, and the related concept of the emotional environment is an element in Pinar et al. (2014). In that they relate to evoked social currency, and how the brand affects consumers feelings about themselves and their relationships with other users, *feelings* are also linked to *self-image congruence* (Keller, 2001).

#### 2.6.2.3 The Inner Model Constructs and Hypothesised Relationships

As discussed in section 2.6.2.1, the model adapted for the current study draws on the SBL model (Krystallis & Chrysochou, 2014; Pillososof et al., 2009) by incorporating *brand loyalty* as the ultimate consumer response to brand evaluation and disposition. This approach aligns with the perspectives of several authors (Chaudhuri & Holbrook, 2001; Dick & Basu, 1994; Keller, 2001). However, in both the SBV (Grace & O'Cass, 2005) and SBL models (Krystallis & Chrysochou, 2014; Pillososof et al., 2009) the respective *brand verdict* or *brand loyalty* responses ultimately result from consumers' positive or negative disposition towards the brand or *brand attitude*. The disposition that is *brand attitude* stems from the consumer's global perceptions of brand stimuli—*brand hearsay* and *brand evidence*—together with their level of *satisfaction* with their experience (Grace & O'Cass, 2005). The brand literature shows that future behavioural intentions towards a brand are strongly predicted by attitudes (Keller, 2013). It is noted that rather than being an immediate reaction to service brand performance, attitudes are formed through a process of interpretation, evaluation of information (Low & Lamb Jr., as cited in Grace & O'Cass, 2005), and are affected by several brand dimensions including brand name, price and self-image congruence (Burton, Lichtenstein, Netemeyer, & Garretson, 1998;

Sirgy et al., 1997; Zinkhan & Martin Jr., 1987). However, these brand dimensions are in themselves insufficient for forming an overall disposition towards the brand, and prior literature confirms the critical role of the mediating variable of *satisfaction* in generating positive brand attitudes (Cronin & Taylor, 1992; Spreng, MacKenzie, & Olshavsky, 1996). *Satisfaction* is contrasted to *brand attitude* by Grace and O’Cass (2005) as a more immediate reaction, or the “consumer’s positive/negative response to the perceived service performance and the confirmation/disconfirmation of pre-purchase service expectations” (p. 127). Prior studies have shown several attributes classified as *brand evidence* (Grace & O’Cass, 2005) have a profound effect on satisfaction; including *core service*, *employee service* and *feelings* (Babin & Babin, 2001), and the *servicescape* (Chang, 2000). The *satisfaction* and *brand attitude* constructs relate to the process of service evaluation and as they are not particular to the higher education sector will remain unaltered within the model.

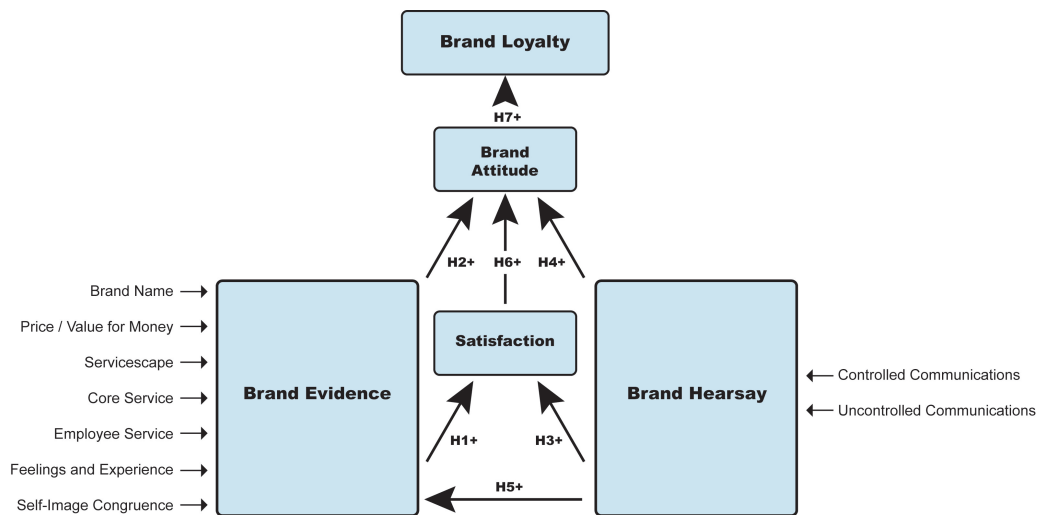
Whilst *brand hearsay* or brand communications are distinct in the Grace and O’Cass (2005) model from brand dimensions embedded in *brand evidence*, *brand hearsay* must precede *brand evidence* for consumers to be aware of the brand (Keller, 1993). Furthermore, brand communications have been found to influence the way in which consumers perceive the brand’s attributes or *brand evidence* (Olsen & Dover, as cited in Grace & O’Cass, 2005). Brand communications received by customers prior to their experiencing the service have been found to result in the formation of expectations about the likely performance of the service, which, when compared to the actual service result in either positive negative affect, and an evaluation and disposition that will, in turn, influence satisfaction (Mano & Oliver, 1993; Phillips & Baumgartner, 2002; Westbrook & Oliver, 1991). Other studies have shown communications to directly influence performance perceptions or satisfaction and, in turn, brand attitudes (Mangold et al., 1999).

These relationships are explored in several service industry settings in the SVB and SBL studies (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009) and will be tested in the context of the higher education service industry in the current study using the University Brand Loyalty model.

Figure 2 provides a visual representation of the proposed model which shows the relations between the latent constructs *brand hearsay* and *brand evidence*, and the formative attributes that cause them; as well as the hypothesised causal relationships between these the other constructs in the structural or inner model—*satisfaction*, *brand attitude* and *brand loyalty*. The hypothesised relationships between the inner model constructs in this adapted model are not only supported by the theory presented in the foregoing discussion, but can be more directly justified by the results of the Grace and O’Cass (2005), Pillossof et al. (2009) and Krystallis and

Chrysochou (2014) studies on which the model is based. The results of all three studies show H1 and H2 to be supported with *brand evidence* being found to significantly influence both *satisfaction* and *brand attitude* (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Although H3 is not supported in the Pillossof et al. (2009) or the Krystallis and Chrysochou (2014) results, Grace and O’Cass (2005) find support for the hypothesis that *brand hearsay* influences *satisfaction*, and this hypothesised relationship is therefore retained in the current model for exploration in the university context. All three source studies also find support for H4 and H5 that *brand hearsay* has a positive impact on *brand attitude* and *brand evidence* respectively (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Similarly, the results from the three reference studies show support for H6, that *satisfaction* positively impacts *brand attitude* (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Lastly, H7 is supported in both studies that incorporate the *brand loyalty* construct, with the results showing it to be positively impacted by *brand attitude* (Krystallis & Chrysochou, 2014; Pillossof et al., 2009). It is hypothesised that the inner model relationships established in the reference studies will also apply in the higher education context, given that universities are considered constituents of the services sector.

**Figure 2: The University Brand Loyalty Model**



Adapted from Grace and O’Cass (2005), Pillossof et al. (2009)  
and Krystallis and Chrysochou (2014).

As described above and illustrated in Figure 2 by the directions of the arrows and the ‘+’ symbols in the structural model, the hypothesised relationships between the inner model constructs are causal in nature, with changes in the predictor variables positively impacting the

predicted variables. The structural model relationships can thus be summarised in terms of the following seven hypotheses.

**H1:** *Brand evidence* has a positive impact on *satisfaction*.

**H2:** *Brand evidence* has a positive impact on *brand attitude*.

**H3:** *Brand hearsay* has a positive impact on *satisfaction*.

**H4:** *Brand hearsay* has a positive impact on *brand attitude*.

**H5:** *Brand hearsay* has a positive impact on *brand evidence*.

**H6:** *Satisfaction* has a positive impact on *brand attitude*.

**H7:** *Brand attitude* has a positive impact on *brand loyalty*.

## 2.7 Chapter Summary

This chapter commenced by contextualising brand theory as a sub-discipline of marketing and introducing the concept of brand as a key creator of value. CBBE parent theories and conceptual models were introduced, initially presenting the external perspectives of Aaker (1991), Blackston (1992) and Keller (1993, 2001), and then contrasting these with the multi-perspectival views of Erdem and Swait (1998) and Burmann et al. (2009). After touching on the direct and indirect measurement approaches taken to the operationalisation of CBBE concepts, the literature review then overviewed the body of literature that deals with CBBE in the service sector. To build strong brands, service firms must address the factors that differentiate services from goods (Lovelock, 1983; Onkvisit & Shaw, 1991; Zeithaml, 1981) by: ensuring consistency between external and internal messaging, employee behaviours and appearance; focusing on establishing emotional connections with customers to engender trust and feelings of closeness; and providing customer experiences that are positively differentiated (Berry, 2000).

Having reviewed the parent and intermediate brand literature, the issue of the commodification of education and notion of student as consumer were addressed. This perspective is contentious as it is at odds with the traditionally held philosophical ideals of the pursuit of knowledge as an end in itself (Jarvis, 2014); however, it is argued that universities have not been impervious to the market ideology, which has resulted in a shift in focus to the *qualification* being viewed as a commodity. Furthermore, the introduction of fees in higher education also gives tangible form to the notion that students are customers (Coughlan, 2009).

The review then turned to CBBE in higher education environments. To achieve the objectives of creating differentiation and preference, higher education institutions have increasingly leveraged branding approaches drawn from the corporate services sector (Binsardi & Ekwulugo, 2003; Chapleo, 2015; Ivy, 2001; Mazzarol & Soutar, 1999), and a growing body of literature proposes the need for sector-specific CBBE frameworks to be developed. A detailed examination was undertaken of eight brand models specifically developed for the higher education sector (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Dennis et al., 2016; Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015). However, comparison of these models generally reveals a deficit of consensus on the process and drivers underlying brand equity creation, thereby highlighting gaps in the extant literature. Although some overlap can be found between models at the brand attribute level, the lack of parity is particularly evident across brand dimensions. This lack of agreement comes about as the result of the studies' divergent theoretical origins and measurement approaches. Furthermore, considering that brand experience is key for service brands and the relationship between customers and service brands is recognised to evolve with time (Berry, 2000; Brodie, 2009; de Chernatony & Segal-Horn, 2003), the comparison of study results is further complicated by differences in the stage of study, and therefore brand experience, of the sample groups. From the comparison, it is also evident that the range of attributes and/or drivers of brand value they incorporate varies greatly in emphasis (Appendix A). Moreover, several of the studies limit any understanding of the *process* of brand value or equity creation by directly measuring the impacts of observable attributes and dimensions on customer-perceived value (Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015), or failing to address the experiential nature of the customer-brand relationship (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009). Only Dennis et al. (2016) explore the brand equity creation *process* for current students; yet, their model does not provide any comprehensive inventory of the attributes that underpin the key brand dimensions and drive positive equity.

In consideration of the controversies and deficiencies identified within the extant higher education brand equity literature, the gaps needing to be addressed are summarised by the following research problem.

*What are the attributes and dimensions that influence student perceptions of Australian university brands, and what is the process of customer-based brand equity creation in this higher education context? How does this compare with other service industries?*



This research problem can be articulated in terms of the following three research questions.

- RQ1. Which university brand attributes are meaningful to students?*
- RQ2. What is the relative influence of the attributes and dimensions of the university brand on perceived brand favourability, and how does this compare with other services?*
- RQ3. Is the process through which students develop loyalty towards university brands the same as for other services?*

In response to these issues, this chapter presented the proposed conceptual model and hypotheses drawn from the service branding literature. The brand model proposed in this study as a solution for the higher education context is based upon the dimensional categorisations and structural approach originally taken by Grace and O’Cass (2005) in their SVB model, and subsequently adapted by Pillossof et al. (2009) and Krystallis and Chrysochou (2014) as the SBL model. This chapter concluded with a review of the measurement model’s suitability for the higher education context, and a discussion of the hypothesised model relationships.

In the following chapter, the research methodology for the current study is addressed.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1 Introduction**

The previous chapter presented a review of the CBBE literature, identifying gaps, a research problem, and questions needing to be addressed for higher education brands. It concluded by suggesting that the process of creating a deeply held consumer commitment to a brand may be the same for universities as for other service providers. It was proposed that a model adapted from Grace and O'Cass (2005), Pillossof et al. (2009), and Krystallis and Chrysochou (2014) could be applied in the university context to measure the relative influence of higher education brand attributes on brand loyalty. It is the goal of this study to empirically test the adapted scales, the model and its hypothesised relationships in the higher education setting.

This chapter outlines the research methodology used to achieve these objectives. First is a discussion and contextualisation of the overarching research design. This is followed by a description of the sample group and the methods by which sampling and data collection occurred. Ethical issues associated with the research methodology are also given consideration. The rationale for the adaptation and development of the questionnaire then follows leading to a detailed justification of the methods of statistical analysis. Lastly, and directly related to statistical methods, considerations of sample size are also discussed.

### **3.2 The Research Design**

The hypothesised model is based upon Krystallis and Chrysochou's (2014) SBL model, which draws upon Grace and O'Cass's (2005) SBV study. The model, operationalised via measurement scales adapted for the higher education context, is utilised in a new study to test the hypotheses' applicability in the higher education context. The findings have been used as a basis for inducting new theory concerning the dimensions and attributes of the higher education brand, and the process through which brand perceptions are created in this sector.

The hypothesis testing has involved a replication of the quantitative methodological approach as described in the main study conducted by Grace and O'Cass (2005). Quantitative primary research resides within the positivist paradigm (Bryman & Bell, 2011), which assumes a realist ontology and representationalist epistemology, and provides an objective reality against which claims can be verified (Popper, 1979). Based on these assumptions, the advantage of a quantitative approach in the context of higher education brand equity is that it can be used to

predictively model patterns of cause and effect, and to measure and control the brand equity phenomenon.

Following Grace and O'Cass (2005) the observational data for the adapted study was collected in a natural setting through a field study, conducted via an online survey targeting current Australian university students. It is similarly cross-sectional by design, with data being sampled at only one point in time from each subject and collected from the sample group over a three-week period. As the objective of the study is to provide enhanced theoretical and practical understanding of the drivers and processes that result in higher education institution brand equity, the study can be characterised as descriptive in nature (Sekaran & Bougie, 2013).

### **3.3 The Sample Group**

This study aims to replicate the approach taken by Grace and O'Cass (2005) who employ a purposive non-probability sampling technique to examine consumer perceptions of banks and retail brands. Given that customer *experience* becomes the primary locus of service brand information (Berry, 2000), Grace and O'Cass (2005) state specific criteria for the sampling process. Data was collected only from participants who had experience with one of the referred brands and were over 15 years of age; additionally, data collection took place in a natural setting (Grace & O'Cass, 2005).

Considering the experiential nature of the higher education services (Berry, 2000; Dennis et al., 2016; Mourad et al., 2011), the units of analysis for this study comprise currently enrolled university students, as they have direct experience with a tertiary institution and are well positioned to judge higher education brand promise against experienced brand evidence. To be legally considered adults and able to make an independent decision to participate in the study, respondents must be 18-years of age or older. For reasons of convenience and practicality relating to the location of the researchers, the sample for this exploratory study is drawn from Australian public universities.

Like Grace and O'Cass (2005), the current study uses a non-probability, purposive quota sampling technique. Non-probability sampling involves an element of judgement on the part of the researcher, requiring them to make decisions regarding the underlying characteristics of the target population and select cases based either on convenience, a judgement or quota (Bryman & Bell, 2011). Non-probability quota sampling provides distinct benefits, including: the convenient, timely and cost-effective gathering of data (Sekaran & Bougie, 2013); a practical

solution when there is no readily available sample frame (Laerd Dissertation, 2012), as is the case for the current study context where universities do not share lists of currently enrolled students for privacy reasons; and when a response is incomplete or a potential respondent declines to participate, the sampling method flexibly allows for cases to be replaced to make up the required quotas (Doherty, 1994). The quota sampling *process* involves choosing the relevant stratification characteristics (e.g. sex and age), calculating the quotas deemed representative of the population, and then purposively filling these according the assumed probability model and selection process by continuing to invite cases to ensure the quota for each stratum is met (Laerd Dissertation, 2012).

The quota sampling strategy employed in this study takes into account both the student's stage of experience within the higher education sector, and a range of demographic profiles typically found within a university setting. A purposeful inclusion of a spread of respondents approximately reflecting the composition of the broader university student population in Australia aims to minimise respondent bias in the sample group. To achieve this, and to enhance the underlying validity of the quota model used in this study, reference is made to the higher education demographic data published by the Australian Government Department of Education and Training, Higher Education Statistics web site (2015). As a student progresses through different stages of study, their constructed meaning of the higher education brand will change (Dennis et al., 2016). Therefore, the sample includes representation of both undergraduate and postgraduate students in a ratio that approximates the actual proportion of undergraduate to postgraduate students in Australia (Department of Education and Training, 2015). Considering the psychographic profiles of university students are diverse and may be reflected in factors such as gender, and the disciplines students enrol in, data from the Department of Education and Training (2015) additionally provides a valuable reference in terms of the ratio of female to male students, and the proportion of students across each broad field of education and stage of study. To simplify the data collection process for this study, the field of education categories are consolidated according to faculty groupings typically found in Australian universities (Macquarie University, n.d.; University of Newcastle, n.d.; University of Sydney, 2016). These consolidated groupings are shown in Table 4 and are used to guide the filling of quotas during the data collection process. Whilst sub-group ratios are discussed in this section, the size of the sample group will be determined according to the statistical method and is detailed in the *analysis* section.

**Table 4. 2015 First Half Year Australian Student Data**

<b>Undergraduate</b>	74%	<b>Postgraduate</b>	26%	
<b>Male</b>	44%	<b>Female</b>	56%	
<b>Broad Field of Education Ratios</b>		<b>Consolidated Quota Sub-Goup Ratios</b>		
	Society and Culture	22%		
	Creative Arts	8%	Arts and Social Sciences	39.0%
	Education	9%		
	Management and Commerce	22%	Management and Commerce	22%
	Health	18%	Health	18%
	Engineering and Related Technologies	6%		
	Information Technology	4%	Engineering, Architecture and Information Technology	12.0%
	Architecture and Building	2%		
	Natural and Physical Sciences	8%		
	Agriculture, Environmental and Related Studies	1%	Natural and Physical Sciences	9.0%
	<b>TOTAL</b>	<b>100%</b>	<b>TOTAL</b>	<b>100%</b>

Adapted from Australian Government, Department of Education and Training (2015)

### 3.4 Data Collection

The quantitative data required for this study was collected via a structured questionnaire, administered through an electronic, online survey tool. Given the potential difficulty identified by the researchers of reaching and filling the above-described quota groups, the author commissioned well-regarded international market research firm, Research Now<sup>®</sup> Group (2018) to host the questionnaire and collect the data.

Web-based surveys provide the advantage of capturing responses directly into an online database, mitigating the effort and possible transcription errors associated with paper-based surveys. This approach also avoids the printing and postage cost associated with mail surveys. Furthermore, electronic questionnaires reduce the time and cost associated with personally administering questionnaires, and mitigate possible bias introduced by the researcher's inconsistent explanation of the questions to respondents (Sekaran & Bougie, 2013). Additionally, the survey software used by Research Now<sup>®</sup> Group provides functionality benefits such as automatic detection and rejection of any attempts by participants to submit more than one response; and the exclusion of incomplete responses from the final dataset.

Benefits of electronic surveys from the participant's perspective include being able to respond anonymously and at their own convenience. Whilst it can be assumed that most current Australian university students are computer literate, it can also be concluded that the sample group are both computer literate and have access to the Internet, having signed up with the

Research Now<sup>®</sup> to participate in online market research. The electronic method of data collection is therefore appropriate for this group.

Participants were selected from a well-maintained panel of individuals who had voluntarily listed with the Research Now<sup>®</sup> market research database. For this study, the firm invited participation via email to male and female panellists in Australia, aged between 18 and 99 years. The invitation contained information provided by the author about the nature of the study (Appendix B), as well as the approximate timeframe for questionnaire completion. Since participation in higher education, level of study and discipline were not targetable within the panel, only age, gender and being in Australia were targeted, with other quota requirements being filled naturally.

Those panellists who chose to proceed from the email invitation to the survey did so by clicking on an embedded link, which initially re-directed them to the participant information statement provided by the author (Appendix C). Those participants still wishing to proceed after reading the statement continued through to the web-based questionnaire (Appendix D). The questionnaire wording, structure and scales were provided by the author, and were scripted verbatim by Research Now<sup>®</sup> into their web-based survey tool. The questionnaire was equivalent for all respondents in terms of structure and guiding information.

The questionnaire was securely hosted on a proprietary survey system residing on the Research Now<sup>®</sup> servers (2018) and included numerous inbuilt quality checks to prevent multiple responses from the same participant (Tilotia, K., personal communication, April 27, 2017), mitigating the risk of data redundancy. Embedded validation scripts also prompted respondents to answer all questions prior to submitting their complete response; thus, incomplete responses could not be submitted. At several points during the survey period the data was reviewed against target quotas and the system was adjusted with categories either being closed or left open for collection to ensure the sample closely reflected the desired ratios detailed in Table 4.

### 3.5 Ethics and Confidentiality

The University of Newcastle provides guidelines for conducting research, and all researchers must obtain approval from the University's Human Research Ethics Committee (HREC) before the research can commence (University of Newcastle, 2018). The relevant HREC approvals were obtained prior to the commencement of this study. In addition to this, HREC requires detailed information is provided to potential participants before they agree to proceed. This is contained within the participant information statement (Appendix C), which provides context to the research and addresses ethical issues, including that participation is voluntary and anonymous, and that participants must be an adult (18 years or older) to take part. The statement also clarifies that the participant may withdraw from the survey at any time, provides avenues for further information or complaint and cites the HREC approval number.

In addition, and as required by the University of Newcastle, the research data will be retained and securely stored for a minimum of five years. This allows access to the data should any queries regarding the data collection process arise.

### 3.6 The Survey Instrument

#### 3.6.1 Development Approach and Rationale

The questionnaire first developed by Grace and O'Cass (2005) and adapted by Pillossof et al. (2009) and Krystallis and Chrysochou (2014) takes the *indirect* approach to operationalising the consumer-based view of brand, as the variables in their models are conceptualised as latent and cannot be directly observed, with operationalisation and measurement of all constructs occurring via multiple indicators. This approach aligns with the conceptualisations of Aaker (1991, 1996), Buil et al. (2008), de Chernatony et al. (2004) and Yoo and Donthu (2001) by measuring the outcome variables such as associations, satisfaction, brand attitudes and brand loyalty. In the original empirical studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), the first order reflective constructs of *satisfaction*, *brand attitude* and *brand loyalty* are measured directly via multiple items; whereas the second order formative constructs of *brand evidence* and *brand hearsay* are operationalised via the manifold items associated with their underlying first order indicators. The approach of measuring “mega-concepts” through interrelated dimensions (Cheung, 2008) has become prevalent in brand and marketing literature (Bruhn, 2008; Hair et al., 2012; Jarvis et al., 2003).

As the theoretical model and measurement scales for the current study are adapted from Grace and O'Cass (2005), Pillossof et al. (2009), and Krystallis and Chrysochou (2014), the current

questionnaire similarly makes use of observable indicators to represent latent constructs. The approach taken in the current study has been to align the structure, question sequencing and wording of the questionnaire (Appendix D) with the empirically tested instruments used by Grace and O’Cass (2005), Pillossof et al. (2009), and Krystallis and Chrysochou (2014). In accordance with the original studies (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), the survey items are measured on a seven-point Likert scale ranging from strongly disagree (1) to strongly agree (7). It is noted that the use of ordinal variables is deemed appropriate in conjunction with the PLS-SEM method that will be used for the main study (Hair et al., 2012; Reinartz, Haenlein, & Henseler, 2009), and which allows latent variables to be measured through multiple items and scales (Sosik, Kahai, & Piovosio, 2009).

The hypothesised relationships between indicators and their respective latent variables have been established as valid and reliable in reference studies (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Grace and O’Cass (2005) developed their original measurement scales for each of the latent constructs by minimally adapting groupings of observable indicators drawn from previous brand and marketing studies for which validity and reliability had been established. As their constructs were directly informed by existing, empirically tested content domains they could, from the outset, be considered to possess content validity, while the inter-item reliability and construct validity of their measures were confirmed through subsequent correlation analysis and exploratory factor analysis (Grace & O’Cass, 2005). Pillossof et al. (2009) and Krystallis and Chrysochou (2014) subsequently adapted the Grace and O’Cass (2005) instrument, mirroring all items excepting those relating to brand loyalty, for which they drew directly on Yoo and Donthu (2001). Using the same methodological approaches as the original Grace and O’Cass study (2005), the scales were once more established to be reliable and valid (Krystallis & Chrysochou, 2014; Pillossof et al., 2009).

In turn, the questionnaire for the current study closely replicates the Grace and O’Cass (2005) Krystallis and Chrysochou (2014) instruments with minimal adaptation. As such, the constructs presented in the new study reflect those used in the aforementioned research, and it is argued that they derive their content validity by drawing strongly on the existing literature within the services branding domain (Sekaran & Bougie, 2013). As the source questionnaires have already been demonstrated to be valid and reliable in other service sector contexts, the Grace and O’Cass (2005) study was conducted in the Australian context, and the survey instrument used in the current study is only minimally adapted, it is anticipated that these factors will enhance the prospect of the instrument’s validity and reliability in the new socio-cultural setting of Australian universities. Additionally, alignment with established instruments will allow the results of the current study to be compared with the previous findings, thus building upon the



existing literature. Table 5 lists the latent constructs that appear in the proposed model, and the studies from which their related survey questions (indicators) were originally drawn and found to be both reliable and valid.

**Table 5. Summary and Sources of Construct Measures**

Latent Construct	Number of Items	Original Sources
Brand Name	5	Grace and O'Cass (2005), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Price / Value for Money	4	Sweeney and Soutar (2001), Grace and O'Cass (2005), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Servicescape	4	Cronin and Taylor (1992), Grace and O'Cass (2005), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Core Service	5	Grace and O'Cass (2005), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Employee Service	7	Cronin and Taylor (1992), Grace and O'Cass (2005), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Feelings	12	Jayanti (1995), Grace and O'Cass (2005), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Self-Image Congruence	4	Sirgy et al. (1997), Grace and O'Cass (2005), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Controlled Communications	6	Holbrook and Batra (1987), Grace and O'Cass (2005), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Uncontrolled Communications	10	Bansal and Voyer (2000), Grace and O'Cass (2005), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Satisfaction	5	Caruana, Money and Berthon (2000), Grace and O'Cass (2005), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Brand Attitude	5	Yoo and Donthu (2001), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)
Brand Loyalty	5	Yoo and Donthu (2001), Pillosof, Nickel, and Krystallis (2009), and Krystallis and Chrysochou (2014)

The adaptation required to contextualise the questionnaire for use in the higher education sector has been informed by the extant higher education branding literature, and the expertise drawn from these sources has contributed to maintenance of the instrument's content validity (Bryman & Bell, 2011). Attention has been given to adaptation of indicators related to the first order constructs for *brand evidence* and *brand hearsay*, and this has been informed via a process of mapping brand drivers that surfaced in the higher education brand literature against the Grace and O'Cass (2005) indicators and constructs (Table 3).

The hypothesised model is structured so groups of observable indicators represent latent variables. This is reflected in the groupings of items in the questionnaire. As the factorability of the groups of measured reflective indicators and their latent constructs will be used to establish their relationships, a standard rule of thumb has been considered during the development of the

questionnaire where three or more indicators are required to properly identify a factor (Floyd & Widaman, 1995; Marsh, 1998). A minimum of four questionnaire items have been included for each construct to allow some leeway should indicators need to be discarded if shown during testing to have low inter-item correlation on a factor (Table 5). Detail on the approach to the assessment of the validity and internal consistency are discussed in Section 3.7 (data analysis).

### **3.6.2 Adaptation of the Questionnaire**

Following is a discussion of the rationale for specific changes that have been made to the Grace and O’Cass (2005) and Krystallis and Chrysochou (2014) survey items. The adapted questionnaire can be found in Appendix D.

Given the use of non-probability quota sampling (Section 3.2), the questionnaire will capture demographic data to ensure adequate representation across groups. The instrument therefore includes several initial questions relating to gender, stage of study and discipline in which the student is enrolled.

The original SBV instrument was developed with the intention of flexibility, so that the words “store” or “bank” could be substituted with the names of other service providers (Grace & O’Cass, 2005). To this end, Krystallis and Chrysochou (2014) replace these terms with “airline” and “bank”. For the current study, “university” or “institution” will be substituted. In some cases, the word “service” used in the original items (Grace & O’Cass, 2005) are replaced by “course” or “education”, and “use” is replaced with “attend” to enhance contextual relevance.

The items relating to the consumer response variables of *satisfaction* and *brand attitude* have not required any further adjustment. They remain unaltered from the original SBV questionnaire (Grace & O’Cass, 2005) other than for the substitutions described above.

Similarly, the final group of items relating to *brand loyalty* is directly drawn from Krystallis and Chrysochou (2014), with the added substitutions of “study” for “make the same trip”, and “if it offered the course I wanted to study” for “if it were available for my trip”. The question that indicates intentions of loyalty or continued patronage, “I am likely to use this airline in future” (Krystallis & Chrysochou, 2014, p. 146), is replaced with “I intend to complete my degree at this university” as this more accurately represents the sustained nature of the institution–student relationship over several years for the completion of what is typically a single degree enrolment (Binsardi & Ekwulugo, 2003; Hemsley-Brown & Goonawardana, 2007), compared to the shorter, more intermittent customer-brand interactions that are typical in the airline industry.

As discussed in Section 2.6.2.2, no changes were required to the indicators associated with the *brand hearsay* construct. Consequently, no amendments have been made to the wording of survey items relating to controlled and uncontrolled communications, other than the above-described sector contextualisation.

The review of the higher education branding models (Table 3) reveals several brand attributes that map directly to the indicators of *brand evidence* (Grace & O’Cass, 2005). As discussed in Section 2.6.2.2 these include *brand name*, *price or value for money*, *feelings* and *self-image congruence*. No changes have been made to the related items other than substitution of context-related words. However, adjustments to the items for *servicescape*, *core service* and *employee service* were required to better reflect the dimensions of the higher education brand.

For the *servicescape* construct, Grace and O’Cass (2005) include staff appearance and physical facilities being up-to-date, attractive and in keeping with the service provided. Whilst none of the reviewed higher education brand studies refer to staff appearance, several refer to physical facilities, technical facilities, library facilities or student living facilities (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Goi et al., 2014; Khanna et al., 2014; Pinar et al., 2014), and a number refer to physical location as being a brand driver (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Goi et al., 2014; Khanna et al., 2014). For this reason, an item relating to location replaces staff appearance for the *servicescape* indicators. Although no other changes were made to the remaining *servicescape* indicators other than the substitution of the word “university”, a statement is included in the questionnaire prior to the *servicescape* measurement scale to explain what “facilities” mean in the university context. The elements included in the definition of university facilities were drawn from the higher education brand literature (Aggarwal Sharma et al., 2013; Goi et al., 2014; Pinar et al., 2014):

*When referring to the FACILITIES of a university we mean: the buildings and interior fit-out; physical and virtual resources including library, computer and science labs, online learning spaces and wireless network; recreational and sporting amenities including cafes, bars, gym, pool and sports fields.*

*Core service* is articulated by Grace and O’Cass (2005) as the product content, structure and process of delivery. Whilst one higher education brand study specifically refers to the “core service” (Goi et al., 2014), other education brand studies identify a variety of core service components including: the range of courses offered (Vukasovic, 2015); academic standards (Pinar et al., 2014); pedagogy (Aggarwal Sharma et al., 2013; Khanna et al., 2014; Vukasovic, 2015); knowledge enhancement (Khanna et al., 2014); support services (Bennett & Ali-Choudhury, 2009; Pinar et al., 2014); industry integration (Aggarwal Sharma et al., 2013;

Khanna et al., 2014); and graduation/career prospects, which is most prominently featured (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015). Whilst no change has been made to the wording of the *core service* questionnaire items other than the substitution of “university”, the statement that *introduces and explains* the core service construct in the original questionnaire (Grace & O’Cass, 2005) has been altered as follows to reflect the above-described range of higher education “core service” concepts:

*When referring to the CORE SERVICE of a university we mean: the range of courses offered; academic standards; pedagogy / method of teaching / the knowledge enhancement process; non-academic support services and activities (clubs, societies, sports etc.); industry integration; career prospects on graduation.*

Lastly, Grace and O’Cass (2005) acknowledge *employee service* as being closely related to the *core service*, but clarify that it specifically refers to the performances and behaviours of the employees during delivery of the service. Whilst Goi et al. (2014) make direct reference to employee service, a frequently referenced concept foregrounded in the higher education literature relating to employee performance and competence is the calibre of faculty and their intellectual capital (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015). The original question bank contained an item relating to banking and retail employee service skill and feeling safe in their *transactional* abilities (Grace & O’Cass, 2005). As student interactions with faculty and the process of learning and teaching would not typically be characterised as transactional, this item is amended to incorporate wording relating to the calibre of the university employees’ expertise in their respective fields.

### **3.6.3 Response Error**

Response bias can have a large impact on the validity of surveys and occurs when, due to a range of cognitive factors, participants are influenced away from an accurate response, either unconsciously misinterpreting questions or intentionally providing misleading answers (Sekaran & Bougie, 2013). Categories of response error include: acquiescence bias or “yea-saying”; extreme responding, which is often a factor of cultural identity; demand characteristics, wherein respondents adopt a position they believe to be congruent with the purpose of the study; and social desirability bias, which drives responses perceived to be favourable (Gove & Geerken, 1977; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

In the current study the set of indicators related to “feelings” is leveraged to counter response error and enhance data quality. The related items are drawn verbatim from Grace and O’Cass

(2005) and Krystallis and Chrysochou (2014), and ask respondents to indicate when using the service whether they feel: annoyed, happy, irritated, frustrated, pleased, sad, disgusted, uneasy, good, nervous, confident or impressed. The 12-item *feelings* scale contains five feelings that can be categorised as positive, and seven which are negative, and as per the reference studies, the negative feelings are reverse scored (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014). Given that consumer research literature commonly categorises positive and negative emotions as separate dimensions of affect (Bagozzi, Gopinath, & Nyer, 1999; Dubé & Morgan, 1998; Laros & Steenkamp, 2005; Phillips & Baumgartner, 2002), and that positive and negative emotions result respectively from motive consistent or motive inconsistent appraisal (Roseman, 1991), it is anticipated that respondents’ evaluation of the *feelings* items (*f1–f12*) should show variance between those that can be categorised as positive or negative. A decision was therefore made to detect suspicious response patterns by assessing the standard deviation of each respondent’s ratings for *f1–f12* for any straight-line responses (for example, where a respondent has provided a rating of seven, strongly agree, for all 12 items, including that they felt equally happy and sad, nervous and confident, and disgusted and impressed). A standard deviation of at least 0.5 (rounded) would need to be achieved for a respondent’s ratings to vary by at least one point on the seven-point Likert scale when comparing positive feelings items to negative feelings items. Any cases displaying a standard deviation of  $<0.5$  across the feelings items are therefore treated as displaying response bias, and are removed from the dataset prior to proceeding with the reverse scoring of the negative feelings items for further analysis.

### 3.7 Data Analysis

#### 3.7.1 Statistical Methods

When adapting an existing model, greater fidelity to the original study can be achieved not only by maintaining the integrity of the initial model’s core elements and structure, but by replicating the statistical methods used in the reference study (Tabak et al., 2012). The approach to data analysis for this study therefore replicates that used by Grace and O’Cass (2005), Pillossof et al. (2009) and Krystallis and Chrysochou (2014) by adopting the PLS-SEM method.

Developed by Wold (1980), the variance-based, multivariate PLS-SEM technique is suitable where the research is exploratory in nature, having the objectives of theory development and testing, and prediction (Ringle et al., 2012). The strengths of PLS-SEM lie in its ability to provide analysis of causal or structural equations where estimates of both the structural and measurement relations are required, and to simultaneously estimate the relative contribution of multiple measures (Hair et al., 2011; Nitzl, 2016). PLS-SEM provides additional advantages

over other CB-SEM techniques in that models can incorporate formative as well as reflective measures, it is well suited for complex hierarchical component models in which two or more layers of construct exist, and can simplify structural paths in models where several related concepts are combined (Hair et al., 2014; Hair et al., 2012). PLS-SEM also provides the benefits of working well with considerably smaller sample sizes than other CB-SEM approaches, requiring less restrictive assumptions regarding normality (Hair et al., 2011; Ringle et al., 2012).

As with other structural equation modelling techniques, PLS-SEM models comprise a structural component that reflects the relationships between latent constructs and a measurement component that illustrates the relationships between the latent variables and their indicators (Haenlein & Kaplan, 2004). The PLS-SEM path model consists of both the structural *inner model* that displays the constructs and the relationships between them, and the *outer measurement model* that shows the relationships between the constructs and indicator variables (Hair et al., 2014). Within the structural model PLS-SEM provides for two types of construct: exogenous or independent variables, which only have arrows pointing out from them (never to them) and explain the other constructs in the model; and endogenous variables which have arrows leading to them and as the constructs being explained in the model can act either as dependent variables or simultaneously as independent and dependent variables (Hair et al., 2014).

Furthermore, PLS-SEM flexibly allows for either a formative or reflective approach to the measurement of latent variables. Reflective relationships exist where the properties of the underlying construct are manifest in its observable variables, or observed simultaneous changes in the reflective indicators are considered a function of an alteration in the underlying construct (Hair et al., 2014; Kadipasaoglu et al., 1999). Opposing this, formative relationships are those for which several observable indicator variables are used in predicting latent variables of interest (Kadipasaoglu et al., 1999), or individual changes in the indicators are assumed to cause changes in the latent construct (Jarvis et al., 2003). Unlike CB-SEM, which focuses on reproducing the covariance predicted by the theoretical model by minimising the differences between it and the sample covariances, PLS-SEM seeks to maximise the variance of the dependent variables as explained by the independent variables (Haenlein & Kaplan, 2004). To achieve this, PLS includes a third element in addition to the structural and measurement components, being the estimation of the relative weightings of the observable indicators that link to their respective formative latent variables (Haenlein & Kaplan, 2004). This allows for the fact that formative indicators will not necessarily change simultaneously because they may be measuring different attributes of the latent construct, and that some indicators may exert

greater influence on the unobservable formative constructs than others (Kadipasaoglu et al., 1999).

The PLS-SEM procedure involves an evaluation of the outer reflective and/or formative measurement model, followed by an evaluation of the inner structural model. For reflective outer models in PLS-SEM, indicator reliability is determined through an assessment of their loadings from the factor to the indicator, and measurement fit is tested through internal consistency reliability, composite reliability and Chronbach's alpha (Garson, 2016; Hair et al., 2014; Henseler, Ringle, & Sarstedt, 2012). In the reflective mode, convergent validity is tested with average variance extracted (AVE), discriminant validity, which shows that the construct is strongly related to its own measures (Chin, 2010), is tested with the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio (Garson, 2016; Hair et al., 2014; Henseler et al., 2012). For formative outer models the primary statistic for evaluating indicator reliability is their weight, or path from the indicators to the composite variables (Hair et al., 2012). It is recommended in the PLS-SEM literature that the evaluation of indicator weights should also include a review of their significance through bootstrapping procedures. (Hair et al., 2012; J., Sarstedt, Hopkins, & Kuppelwieser, 2014). Convergent validity for formative factors requires an evaluation of the  $R^2$  statistic for their corresponding latent construct (Garson, 2016). Lastly, as multicollinearity between indicators can be an issue for formative constructs, it should also be assessed through the variance inflation factor (VIF) statistic (Hair et al., 2012).

Having established evidence of reliability and validity for the outer model, the inner model estimates may then be examined via the variance-based, non-parametric evaluation criteria (Hair et al., 2012). This requires an assessment of the  $R^2$  path coefficients produced by the PLS-SEM algorithm, which for the endogenous latent variables (factors) measures effect size in path models, and the percentage variance in the latent variable that is explained by the model (Garson, 2016). The significance of these standardised path coefficients should also be assessed by using bootstrapping procedures (Hair et al., 2012).

Grace and O'Cass (2005) originally selected the PLS-SEM approach as an objective of their study was to test a new theoretical model that was complex and needed to be tested not on the basis of a single general fit index, but on multiple indices characterised by "aspects such as their quality, sufficiency to explain data, congruence with systematic expectations and precision" (p. 133). The use of PLS-SLM in the original and subsequent models (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009) manifests their complex, hierarchical nature and their predictive theoretical objectives.

In the adapted SBL model (Krystallis & Chrysochou, 2014; Pillossof et al., 2009), inner model relationships exist between the exogenous construct *brand hearsay*, and the endogenous constructs *brand evidence*, *satisfaction*, *brand attitude*, and *brand loyalty*. It is additionally important to distinguish between the model's reflective and formative constructs as the direction of their causation determines the subsequent PLS estimation methods to be applied. Within the reference studies (Krystallis & Chrysochou, 2014; Pillossof et al., 2009), the first order dimensions of *brand hearsay*, *brand evidence*, and the response constructs of *satisfaction*, *brand attitude* and *brand loyalty* are conceptualised in a reflective mode and the indicators covary as reflections of the same concept; however, the second order formative constructs *brand hearsay* and *brand evidence* are predicted as compositions of the first order constructs that underlie them but do not correlate or share a common theme. *Brand hearsay* is estimated from the weight relations of the first order reflective constructs *controlled communications* and *uncontrolled communications*; whilst *brand evidence* is estimated from the relative weightings of the first order reflective constructs *brand name*, *price or value for money*, *servicescape*, *core service*, *employee service*, *feelings and experiences*, and *self-image congruence* (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). The hierarchical component model (HCM) in all three reference studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009) and in the current study contain reflective first order constructs and formative second order constructs.

When determining the approach to processing an HCM where first and second order constructs co-exist, the literature accounts for four main types of PLS-SEM model to consider: reflective–reflective, reflective–formative, formative–reflective, and formative–formative (Jarvis et al., 2003; Wetzels, Odekerken-Schröder, & Oppen, 2009). It is recommended that the procedural approach taken should be dictated by the nature of the model being examined (Amaro & Duarte, 2016; Becker, Klein, & Wetzels, 2012; Hair et al., 2014; Henseler & Chin, 2010).

The current reflective–formative model is categorised as a Type II PLS model (Chin, 1998b; Jarvis et al., 2003), and Wilson and Henseler (2007), Becker, et al. (2012), and Amaro and Duarte (2016) cite three PLS-SEM approaches proposed in the literature for the modelling and analysis of this type of model. These include the repeated indicator approach (Wold, 1980), the two-stage sequential approach (Ringle et al., 2012), and a hybrid approach (Wilson & Henseler, 2007). However, several authors identify weaknesses associated with the repeated indicator approach because it measures second order factors by loading them with all the indicators from first order factors, which can lead to biased loadings or weights where an unequal number of indicators exist on the lower order constructs (Chin, 1997; Chin, Marcolin, & Newstead, 2003; Ringle et al., 2012). Furthermore, there is evidence that the repeated use of the same indicators



can result in residuals that are artificially correlated (Becker et al., 2012). Whilst this latter problem can be overcome by using the hybrid approach and splitting the indicators between first and second order constructs so they are each only used once, the disadvantage of using only half the number of measures on each construct is reduced reliability (Becker et al., 2012). Similarly, validity can become problematic where the split results in fewer than two indicators on each first order construct (Amaro & Duarte, 2016). The two-stage approach provides advantages over the repeated indicators and hybrid approaches in that it allows for an unequal number of indicators across the lower order constructs (Amaro & Duarte, 2016; Ringle et al., 2012). This is relevant to the current study given the first order constructs for *brand evidence* and *brand hearsay* in the current model each have between four and twelve indicators. Furthermore, where a model contains an endogenous, formative second order construct (in this case *brand evidence*), the two-stage approach resolves the issue associated with repeated indicators where the variance in the second order construct would otherwise be perfectly explained by the first order construct, resulting in the  $R^2$  statistic being equal to one (Becker et al., 2012; Hair et al., 2014; Henseler & Chin, 2010; Ringle et al., 2012). This would be the case in the currently proposed model where the second order construct *brand hearsay* is a predecessor for the second order construct *brand evidence*, and both are hypothesised to affect *satisfaction*.

Given the reflective–formative format of the current HCM, and that it contains endogenous second order formative constructs and first order reflective constructs with unequal numbers of indicators, a decision was made to utilise the two-stage PLS-SEM procedure as detailed by Hair et al. (2014), Amaro and Duarte (2016), and Gaskin (2012, 2017). This procedure involves a first stage in which the repeated indicators approach is used to estimate the latent variable scores for the first order constructs, followed by a second stage in which the latent variable scores obtained in step one serve as formative indicators for the second order constructs at the same time the path coefficients are estimated between the other constructs (Hair et al., 2014). This process embeds the predecessor latent variables from the nomological net and allows them to explain variance that may result in significant path relationships in the inner model (Hair et al., 2014). Both in stage one and in stage two, the reliability and validity of the indicators is tested to ensure they represent the constructs of interest prior to assessing the standardised path coefficients and significance levels of the relationships in the inner model in the second stage (Chin, 2010).

### 3.7.2 Sample Size

Attention can now turn to the issue of sample size, which, given the exploratory, theory testing nature of the study, is determined by the statistical methods employed. As the main study depends on the use of PLS-SEM, sample size requirements for this method are considered.

One of the advantages of PLS-SEM is that it is said to have minimum demands on sample size whilst providing high levels of statistical power (Hair et al., 2011; Reinartz et al., 2009; Roldán & Sánchez-Franco, 2012; Sosik et al., 2009). A commonly used rule of thumb for determining PLS sample size is that the number of cases must be equal to or exceed ten times the greatest number of formative indicators on any latent variable, or the greatest number of structural paths leading to any latent variable (Chin, 1997). As there are a maximum of seven indicators associated with the *brand evidence* construct in the current model, Chin's (1997) rule of thumb would suggest a minimum sample size of 70 cases. However, in a study conducting Monte Carlo simulations on 240 scenarios, Reinartz et al. (2009) found that to achieve a statistical power of 0.8 for medium population effects, a sample size of at least 100 should be used for PLS. This estimated requirement for sample size comes closer to the conclusions drawn by Cohen (1992) and Green (1991) who recommend that when using PLS in a situation where the largest regression consists of seven indicators and an anticipated medium effect size is to be provided, a *minimum* sample size of 102 cases should be used to achieve a statistical power of 0.8 and an alpha of 0.05. It is noted that the *effect size* found by Grace and O'Cass (2005) for all endogenous variables was  $>0.35$  and would therefore be considered to have a large effect size requiring a smaller sample of only 48 (Cohen, 1992; Green, 1991). However, to err on the side of caution given the adaptations to the model and changed context of the current study, and to achieve consensus with Chin (1997) and Reinartz et al. (2009), the minimum sample size requirement estimated by Cohen (1992) and Green (1991) for a medium effect will be used as guidance.

## 3.8 Chapter Summary

This chapter has detailed the research methodology used for this study. The contextualisation and justification for the research design were addressed. The hypothesis testing procedure involves a replication of the quantitative methodological approach utilised in the main study conducted by Grace and O'Cass (2005). The advantage of a quantitative approach in the context of higher education brand equity is that it can be used to predictively model patterns of cause and effect, and to measure and control the brand equity phenomenon. Following Grace and O'Cass (2005) the observational data for the adapted study was collected in a natural setting

through a field study, conducted via an online survey targeting current Australian university students. The study is similarly cross-sectional by design, with data collected over a three-week period (Grace & O’Cass, 2005). The sample group is described as current, Australian university students. They were selected due to their direct experience with a tertiary institution and are well positioned to judge higher education brand promise against experienced brand evidence. The units of analysis for this study are therefore currently enrolled university students. The chapter also detailed the non-probability, purposive quota sampling technique and its benefits, before outlining the approach to data collection; namely a structured questionnaire, administered through an electronic, online survey tool. Issues of ethics and confidentiality were also addressed.

Next the chapter discussed the development approach and rationale for the adaptation of the original survey instrument for the higher education context. It described how a deliberate approach was taken to align the structure, question sequencing and wording of the questionnaire (Appendix D) with the empirically tested instruments used by Grace and O’Cass (2005), Pillossof et al. (2009) and Krystallis and Chrysochou (2014). Justification was provided for the minimal adaptation of the instrument, and each of the changes documented. Whilst addressing the survey instrument, the issue of response error and how it is detected and managed was also detailed.

The data analysis section of the chapter detailed and justified the statistical methods used in the study. It provided an overview of the PLS-SEM method and its benefits, as well as explaining the components of a PLS-SEM model. From here, the PLS-SEM procedure was overviewed, including the various tests for reliability and validity, the weights and loadings assessments of formative and reflective indicators in the outer model, and the  $R^2$  and path coefficient tests for the inner model. Given the Type II categorisation of the HCMs, the methodology section additionally justified the use of the two-stage approach to the modelling and analysis, as detailed by Hair et al. (2014), Amaro and Duarte (2016), and Gaskin (2012, 2017). Lastly, the chapter addressed the issue of sample size in relation to the statistical method employed. The sample size estimated by Cohen (1992) and Green (1991) for a medium effect is used as guidance, wherein a minimum of 102 cases should be used to achieve a statistical power of 0.8 and an alpha of 0.05.

Having provided a detailed justification for the statistical methods used in the study in Chapter 3, the next chapter proceeds to detail how those procedural methods are applied to the data collected for the study. Results of the analysis are also provided in Chapter 4.

## CHAPTER 4: ANALYSIS AND RESULTS

### 4.1 Introduction

This chapter describes the PLS-SEM procedure applied to the data collected for this study, whereby the statistical outputs are analysed to explain the operationalisation of the constructs and test and model relationships hypothesised in Chapter 3. The analysis incorporates a pilot study in which the survey instrument is initially tested by assessing the factorability of indicators associated with the first order constructs. This is followed by the main study in which a refined instrument is used, and both the outer measurement model and hypothesised inner structural model are tested. The results of the inner model tests are then compared with the hypotheses, and determinations made as to whether the null for each of the hypothesised relationships can be rejected.

The purpose of this study is to generate new theory about the drivers of brand loyalty in the higher education sector, provide an understanding of the relative value of the various higher education institution brand attributes, and confirm the process through which perceptions of the higher education brand are established in the minds of consumers. The study aims to provide an empirically tested theoretical model of the university brand from the customer (student) perspective. It is proposed that scales and a multivariate service brand model derived from Grace and O'Cass (2005), Pillossof et al. (2009) and Krystallis and Chrysochou (2014) can be adapted for use in the higher education context, and that comparable results can be expected in this new setting. As discussed in Section 3.6.2, the existing measurement scales (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009) have been minimally adapted with the objective of operationalising the second order formative constructs *brand hearsay* and *brand evidence*, and the first order reflective constructs *satisfaction*, *brand attitude* and *brand loyalty*, for the higher education services context.

In accordance with the studies on which the current research is based (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), PLS-SEM is used to test the proposed theoretical model. SmartPLS 3 software (Ringle, Wende, & Becker, 2015) is used to perform the analysis.

## 4.2 Model Specification

Before proceeding to the analysis, a brief review of the model is provided. For the inner model, it is hypothesised that the exogenous second order construct *brand hearsay* affects the endogenous second order construct *brand evidence*, and that these variables in turn explain the first order endogenous constructs *satisfaction*, *brand attitude*, and *brand loyalty*. Furthermore, the proposed model contains first order constructs that are reflective, and second order constructs that are in the formative mode. Where constructs appear in *reflective* mode, indicators are the effects of factors (Garson, 2016) and causality runs from the construct to the measures. By contrast, where *formative* constructs appear in a PLS-SEM model, arrows run from the indicators towards the constructs as their respective indicators predict or cause the formative constructs' meaning (Hair et al., 2014; Jarvis et al., 2003).

Whereas the reflective constructs *satisfaction*, *brand attitude*, and *brand loyalty* give rise to their observable indicators, the second order formative constructs *brand hearsay* and *brand evidence* are predicted by their first order reflective constructs. The first order constructs that underlie the formative *brand hearsay* construct are *controlled communications* and *uncontrolled communications*. For the second order formative construct *brand evidence*, the first order constructs that predict it are *brand name*, *price value*, *servicescape*, *core service*, *employee service*, *feelings* and *self-image congruence*. Figure 3 below shows the initial model set-up as it appears in SmartPLS 3 (Ringle et al., 2015). All first order constructs in the model are in reflective mode with arrows running from the constructs towards their indicators, while the second order constructs are formative with arrows running from their underlying first order constructs towards them. The grey arrows run between elements in the outer measurement model and point to or from the indicators associated with each construct. The yellow rectangles show the number of indicators associated with each first order construct and the labels they are assigned for the analytical procedure. The blue circles represent either first or second order latent constructs, with the black arrows running between them representing the hypothesised inner model relationships.

Given the reflective–formative nature of the HCM under study, it is classified as a Type II model (Chin, 1998b; Jarvis et al., 2003). Based on the model type, a decision was made to utilise the two-stage approach to PLS-SEM analysis (Amaro & Duarte, 2016; Gaskin, 2012, 2017; Hair et al., 2014).

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reviewed using a bootstrapping procedure (Hair et al., 2014; Hair et al., 2012), their convergent validity assessed via the  $R^2$  statistic for their corresponding latent construct (Garson, 2016, p. 75), and any multicollinearity issues detected through an assessment of the VIF statistic (Hair et al., 2012). Lastly, it is during the second stage that the inner model estimates can be examined and hypotheses tested. This is done by undertaking an assessment of the percentage variance in the latent variable explained by the model's  $R^2$  path coefficients, and assessing their significance using bootstrapping (Garson, 2016; Hair et al., 2012). The seven hypotheses underlying the study are:

- **H1:** *Brand evidence* has a positive impact on *satisfaction*.
- **H2:** *Brand evidence* has a positive impact on *brand attitude*.
- **H3:** *Brand hearsay* has a positive impact on *satisfaction*.
- **H4:** *Brand hearsay* has a positive impact on *brand attitude*.
- **H5:** *Brand hearsay* has a positive impact on *brand evidence*.
- **H6:** *Satisfaction* has a positive impact on *brand attitude*.
- **H7:** *Brand attitude* has a positive impact on *brand loyalty*.

**Figure 4: Hypothesised Relationships Between Constructs**

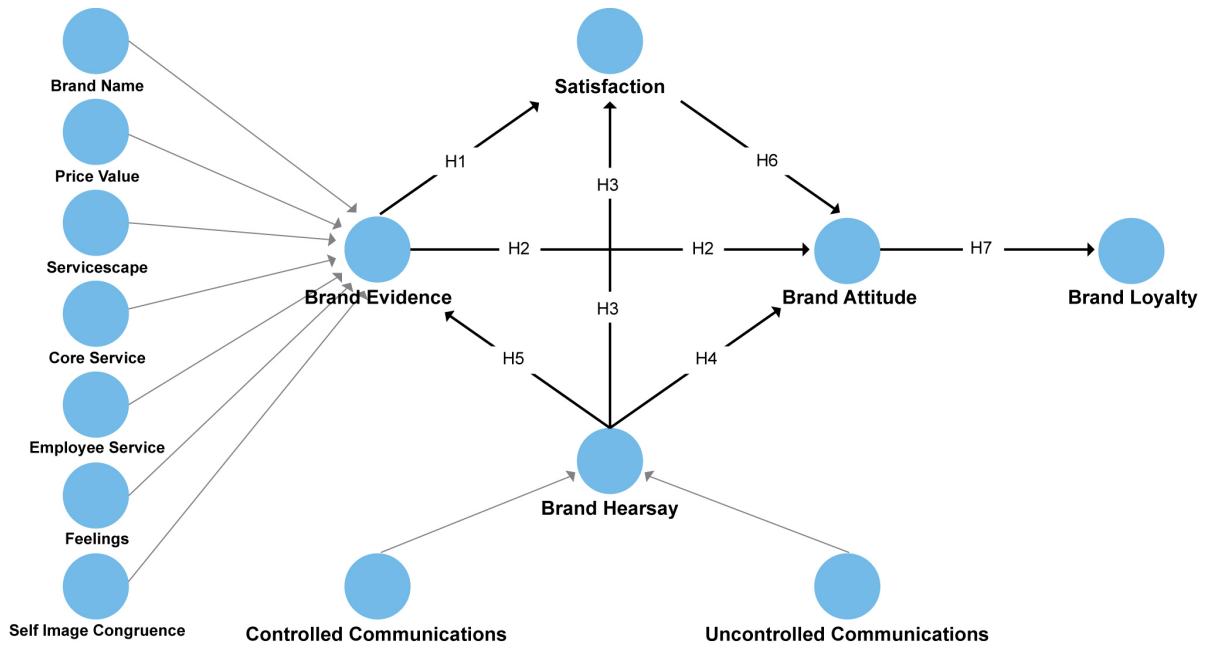


Figure 4 (above) shows the model set-up in SmartPLS 3 (Ringle et al., 2015) with the indicators hidden. This HCM has two layers of latent constructs and comprises both inner and outer model elements. First order constructs appearing in the outer model include *controlled communications*, *uncontrolled communications*, *brand name*, *price value*, *servicescape*, *core service*, *employee service*, *feelings* and *self-image congruence*. Constructs in the inner,

structural model include the second order exogenous construct *brand hearsay*, the second order endogenous construct *brand evidence*, and the first order endogenous constructs *satisfaction*, *brand attitude* and *brand loyalty*. The arrows show the hypothesised path relationships between latent constructs, including the structural model relationships H1–H7.

## **4.4 Model Estimation and Analysis**

### **4.4.1 The Pilot Study**

The purpose of the pilot study is to assess the goodness of the measurement instrument in accurately and consistently measuring the intended constructs. The results of the pilot analysis are evaluated to inform the final version of the questionnaire.

The analysis undertaken in the pilot study is primarily concerned with the reliability and validity of the measurement instrument and ensuring the anticipated causal relationships exist between the first order latent constructs and their related groups of indicators. The groups of questionnaire items representing each construct are assessed for factorability, or the extent to which they correlate due to shared common basis. Reliability helps assess goodness of measure, and “attests to the consistency and stability” (Sekaran & Bougie, 2013, p. 398) with which the measurement instrument measures a concept, and is without bias across its various items (Sekaran & Bougie, 2013). Validity, on the other hand, is a test of how well the instrument measures the concepts it is intended to measure, rather than tapping some other concept (Sekaran & Bougie, 2013). The PLS-SEM literature recommends the following tests of reliability and validity as appropriate for reflective outer measurement models: internal consistency reliability (composite reliability); Chronbach’s alpha as a test of internal consistency reliability; AVE to test for convergent validity; and the Fornell-Larcker criterion and the HTMT ratio to test for discriminant validity (Garson, 2016; Hair et al., 2014; Henseler et al., 2012).

Internal consistency reliability, measured using Chronbach’s alpha, estimates reliability based on the observed indicator variables’ inter-correlations (Hair et al., 2014), or the consistency of respondents’ answers to all the items in the same measure (Sekaran & Bougie, 2013). Results for Chronbach’s alpha range between 0–1 for completely unreliable to completely reliable. Debate exists regarding the threshold for reliability. While Gilford (1954) suggests values of 0.35–0.7 are suitable, others suggest values ranging between 0.7–0.95 (Bland & Altman, 1997; Gliem & Gliem, 2003; Tavakol & Dennick, 2011). For this study, guidance is taken from George and Mallery (2003) who indicate >0.7 as acceptable, >0.8 as good, and >0.9 as excellent. For PLS-SEM, Chronbach’s alpha is seen as a conservative measure of reliability as it



is sensitive to greater numbers of items in a scale resulting in an underestimation of reliability, and it assumes all indicators have equal reliability, whereas PLS-SEM prioritises indicators according to their reliability (Hair et al., 2014). Hair et al. (2014) therefore additionally recommend an assessment of composite reliability, for which values of 0.6–0.7 are recommended as sufficient for exploratory research as it accounts for the different outer loadings of the indicators.

Convergent validity is then tested to determine whether the items measuring the same construct “correlate positively with alternative measures of the same construct” (Hair et al., 2014, p. 102), or share a high proportion of variance. In order to establish convergent validity, indicator reliability initially needs to be assessed, as does the AVE. Not only must each indicator’s outer loading be statistically significant, but for a latent construct to explain a sufficiently substantial part of each indicator’s variance, the strength of the standardised outer loading should be  $\geq 0.7$  for there to be more shared variance than error variance between a construct and its measure (Garson, 2016; Hair et al., 2014; Hulland, 1999). As loadings are correlations, this implies that over 50% of the variance in the indicator results from its construct (Hulland, 1999). Whereas indicator reliability, or the indicator’s outer loading, can be characterised as the communality of an item, AVE establishes convergent validity at the construct level and is referred to as the communality of the construct (Hair et al., 2014). For a construct to explain, on average, more than half the variance of its indicators, a value of AVE of  $\geq 0.5$  must be achieved (Hair et al., 2014). Discriminant validity is also tested to confirm that the constructs predicted as distinct in the model are indeed uncorrelated when empirically measured, and each construct is strongly related to its own measures (Chin, 2010). Hair et al. (2014) recommend the Fornell-Larcker criterion to determine that each construct shares more variance with its own indicators than any other construct; additionally, Henseler, Ringle and Sarstedt (2015) recommend the HTMT as the most accurate method to determine discriminant validity, and suggest that this is achieved where the HTMT value is  $< 0.9$ .

The pilot data comprising a sample of 203 current students across 35 universities, was initially assessed for suitability in preparation for use in the PLS method. The responses were checked for missing data to ensure the validation scripts were working as intended and the survey system was not allowing any incomplete responses to be submitted. All cases were confirmed as comprising a complete set of responses.

Given that positive and negative feelings result respectively from motive consistent or motive inconsistent appraisal (Roseman, 1991), it was expected that responses should show variance across the positive and negative feelings items. Response bias was therefore detected by inspecting the standard deviation for the 12 *feelings* indicators, and any case showing a standard

deviation of  $<0.5$  was eliminated from the dataset. Inspection of the newly-computed *SDFeelings* variable using SPSS 24 software (IBM Corporation, 2016) revealed 25 cases with a standard deviation of  $<0.5$ . A visual inspection of these respondents' ratings across other variables confirmed their response patterns were generally suspicious, and these cases were removed prior to proceeding with the analysis.

Hair et al. (2014) also recommend removing outliers, or extreme responses from the data before running the PLS-SEM algorithm. The Mahalanobis distance, a commonly used procedure for detecting multivariate outliers (Meyers, Gamst, & Guarino, 2013), was computed for each case. Given that 72 variables were present in the data being examined, the Critical Values Table was consulted for  $df=72$ , and any case with a Mahalanobis distance value greater than or equal to 114.835 was considered an outlier and removed from the dataset (Meyers et al., 2013).

As 22 instances of multivariate outliers were detected and removed, the remaining dataset consisted of 156 cases. This was deemed sufficient for the pilot as it met the minimum PLS sample size requirements specified by Cohen (1992) and Green (1992).

Following the approach taken in the reference studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014), the negative *feelings* items were then reverse scored. Accordingly, *f1* annoyed, *f3* irritated, *f4* frustrated, *f6* sad, *f7* disgusted, *f8* uneasy and *f10* nervous were recoded as *f1Rev*, *f3Rev*, *f4Rev*, *f4Rev*, *f6Rev*, *f7Rev*, *f8Rev* and *f10Rev*.

Although normality is not specifically required for PLS-SEM (Kadipasaoglu et al., 1999), Hair et al. (2014) recommend avoiding highly skewed data as it can inflate bootstrap standard errors, resulting in a decreased likelihood that some relationships will be identified as significant. They suggest measures of skewness and kurtosis falling within the range of  $-1$  to  $+1$  as ideal (Hair et al., 2014). An examination of the descriptive statistics for the pilot data revealed all variables fall within an acceptable tolerance for skewness, except for the *feelings* variables *f5* which was positively skewed, and *f6Rev* and *f7Rev* which, given that the scoring for negative feelings had been reversed, showed a negative skew. The employee service variables *es2*, *es4* and *es5* were positively kurtotic or peaked. Should this also be evident in the data for the main study, the implications of these variables being skewed would need to be kept in mind during the assessment of path relationships in the PLS procedure. However, considering the relative resilience of the PLS-SEM procedure to asymmetrical data distributions (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2016), that first order construct *feelings* is measured in the reflective mode and will not be subject to bootstrapping; and a two-stage, composite score approach is being used to measure the related second order construct *brand evidence*, issues arising from asymmetrical data within the bootstrapping procedure are unlikely.

Once the data had been checked and the model was set up in SmartPLS 3 (Ringle et al., 2015), outer model reliability and validity were assessed based on the outputs provided by running the PLS algorithm. The default path weighting scheme and 300 maximum iterations were used as recommended in the SmartPLS 3 software (Ringle et al., 2015). The Chronbach's alpha, composite reliability, loadings, and convergent validity (AVE) for the pilot data appear in Table 6. A subsequent bootstrapping procedure using 500 sub-samples, also run in SmartPLS 3, shows all indicators to have significant relationships to their constructs ( $p=0.000$ ).

The results in Table 6 confirm all constructs and related items in the questionnaire possess internal consistency reliability, as all return a Chronbach's alpha of  $\geq 0.7$  (George & Mallery, 2003). Furthermore, composite reliability for all measures of the outer latent constructs is above 0.9, exceeding the adequacy threshold for exploratory research (Hair et al., 2014). Indicator loadings mostly fall within an acceptable range exceeding 0.7 (Garson, 2016; Hair et al., 2014); however, the *feelings* construct contained several indicators that failed to meet the loading threshold. These included: *f2* – happy (0.643); *f5* – pleased (0.576); *f9* – good (0.694); *f10Rev* – nervous (0.679); *f11* – confident (0.695); and *f12* – impressed (0.573). Although all other constructs exceeded the AVE threshold of 0.5 for convergent validity, the construct *feelings* also fell marginally short, having an AVE of only 0.497.

**Table 6. Pilot Data: Outer Model Convergent Validity and Reliability**

First Order Construct	Loadings Range	Composite Reliability	Chronbach's Alpha	Convergent Validity (AVE)
Brand Name	0.825-0.933	0.951	0.935	0.794
Price Value	0.834-0.886	0.916	0.881	0.733
Servicescape	0.883-0.921	0.950	0.929	0.825
Core Service	0.860-0.941	0.960	0.948	0.829
Employee Service	0.846-0.902	0.961	0.952	0.778
Feelings	<b>0.573</b> -0.797	0.922	0.907	<b>0.497</b>
Self-Image Congruence	0.881-0.943	0.945	0.923	0.812
Controlled Communications	0.929-0.953	0.978	0.973	0.880
Uncontrolled Communications	0.704-0.825	0.944	0.936	0.628
Satisfaction	0.920-0.937	0.968	0.959	0.859
Brand Attitude	0.859-0.941	0.959	0.946	0.823
Brand Loyalty	0.799-0.933	0.951	0.925	0.772

Low loading items may result from poor wording, an inappropriate inclusion or poor transfer from one context to another (Hulland, 1999). As the *feelings* items used in this study were adopted directly from previous studies where they were found to be reliable, the above findings could result from their improper transfer to the higher education context. The PLS-SEM literature recommends indicators with loadings lower than four should always be eliminated from the scale (Hair et al., 2014; Hulland, 1999); however, loadings of 0.4–0.7 should only be considered for deletion if doing so increases composite reliability without affecting content

validity (Hair et al., 2014). Furthermore, Hulland (1999) sites multiple PLS-SEM studies in which items with loadings of between 0.5–0.7 are retained. As the lowest-scoring outer loading in the pilot is *fl2* at 0.573, it was provisionally removed from the model and the PLS algorithm was re-run to determine whether doing so would sufficiently raise the AVE to >0.5. The removal of *f5* from the model resulted in an AVE of 0.527, which acceptably exceeds the threshold required for convergent validity. Following Hulland’s (1999) recommendation, it was nevertheless decided to leave all *feelings* items in the questionnaire for further analysis in the main study. Leaving the full range of contrasting feelings items in the instrument additionally serves the helpful function of an attention trap to detect response bias. As *feelings* items had been directly copied from empirical studies that had found them reliable (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014), it was not considered necessary to alter the wording in any way.

Table 7 (below) contains the SmartPLS 3 (Ringle et al., 2015) results for discriminant validity using the Fornell-Larcker criterion. The bolded number at the top of each column shows the square root of the variance extracted and where each of the numbers below it is smaller than this bolded figure, discriminant validity can be confirmed (Garson, 2016). This is true for all constructs except *feelings* (0.726), for which there is a slight cross-loading with *satisfaction* (0.741).

**Table 7. Pilot Data: Discriminant Validity – The Fornell-Larcker Criterion.**

	ba	bl	bn	cc	cs	es	f	pv	s	sic	ss	uc
Brand Attitude (ba)	<b>0.907</b>											
Brand Loyalty (bl)	0.829	<b>0.879</b>										
Brand Name (bn)	0.434	0.452	<b>0.891</b>									
Controlled Comms. (cc)	0.673	0.588	0.408	<b>0.938</b>								
Core Service (cs)	0.754	0.722	0.545	0.6	<b>0.911</b>							
Employee Service (es)	0.759	0.693	0.452	0.627	0.763	<b>0.882</b>						
Feelings (f)	0.703	0.621	0.208	0.49	0.57	0.578	<b>0.726</b>					
Price Value (pv)	0.518	0.503	0.453	0.525	0.492	0.573	0.367	<b>0.856</b>				
Satisfaction (s)	0.835	0.826	0.421	0.678	0.748	0.764	<b>0.741</b>	0.534	<b>0.927</b>			
Self-Image Congruence (sic)	0.711	0.708	0.544	0.699	0.707	0.694	0.489	0.506	0.701	<b>0.901</b>		
Servicescape (ss)	0.733	0.649	0.524	0.673	0.81	0.751	0.533	0.517	0.683	0.715	<b>0.908</b>	
Uncontrolled Comms (uc)	0.392	0.381	0.412	0.573	0.369	0.362	0.222	0.428	0.459	0.492	0.378	<b>0.793</b>

Based on the closeness of the cross-loading result between *feelings* and *satisfaction* using the Fornell-Larcker criterion, it was decided further analysis was needed. The HTMT test for discriminant validity was subsequently run, as it is considered more rigorous than the Fornell-Larcker criterion (Garson, 2016). The results of the HTMT test appear in Table 8 below. As the highest value returned is 0.877, and Henseler et al. (2015) indicate that an HTMT value of below 0.9 must be achieved, discriminant validity can be confirmed for all constructs, including *feelings* and *satisfaction* (0.769), and it can be confirmed that each construct being measured is distinct from every other in the questionnaire.

**Table 8. Pilot Data: Discriminant Validity – Heterotrait-Monotrait (HTMT).**

	BA	BL	BN	CC	CS	ES	F	PV	S	SIC	SS	UC
<b>Brand Attitude (BA)</b>												
<b>Brand Loyalty (BL)</b>	0.884											
<b>Brand Name (BN)</b>	0.449	0.472										
<b>Controlled Comms. (CC)</b>	0.703	0.619	0.424									
<b>Core Service (CS)</b>	0.795	0.771	0.569	0.626								
<b>Employee Service (ES)</b>	0.798	0.736	0.473	0.651	0.802							
<b>Feelings (F)</b>	0.736	0.658	0.209	0.488	0.591	0.598						
<b>Price Value (PV)</b>	0.538	0.531	0.487	0.553	0.509	0.595	0.352					
<b>Satisfaction (S)</b>	0.875	0.877	0.434	0.702	0.783	0.798	0.769	0.553				
<b>Self-Image Congruence (SIC)</b>	0.756	0.76	0.581	0.741	0.753	0.733	0.499	0.535	0.739			
<b>Servicescape (SS)</b>	0.783	0.7	0.552	0.708	0.863	0.798	0.559	0.545	0.723	0.766		
<b>Uncontrolled Comms (UC)</b>	0.39	0.39	0.43	0.575	0.371	0.361	0.275	0.463	0.454	0.522	0.383	

The pilot study analysis of the questionnaire items and constructs mostly delivered results confirming their reliability and validity against the criteria examined. However, an exception was identified for the *feelings* construct, for which some items showed loadings of below 0.7. As these items did not fall below the threshold at which automatic deletion is recommended (Hair et al., 2014; Hulland, 1999) the decision was made to leave all 12 *feelings* items unchanged in the questionnaire for further analysis in the main study.

Given the relatively high occurrence of response bias detected in the pilot data (25 out of 203 cases or 12.3%) it was decided to set up the survey system for the main study data collection so it automatically detected or rejected any straight-line responses. Using a similar approach to detection of response bias in the pilot study, any case in which the same rating is provided across all 12 *feelings* items would automatically be excluded from the final sample.

#### 4.4.2 The Main Study

##### 4.4.2.1 Introduction

Based on the analysis and findings in the pilot study, only minor changes were made to the final questionnaire set-up before proceeding with data collection for the main study. The amendments involved developing a script in the survey software that automatically detected straight-line responses and eliminated them from the sample. The final study targeted current students of 35 Australian universities who were over the age of 18. A sample of 190 cases was collected to exceed the minimum PLS-SEM sample size recommendations (Chin, 1997; Cohen, 1992; Green, 1991; Reinartz et al., 2009) and allow for the removal of possible outliers or cases showing response bias.

In this section, the analysis and results are presented. The analytical procedure includes the initial examination of the data for response bias, outliers and normality, followed by an exploration of reliability and validity. Adopting the two-stage PLS-SEM approach (Amaro & Duarte, 2016; Gaskin, 2017; Hair et al., 2014) the latent variable scores are first estimated for the first order constructs, and these scores then become the formative indicators for the second order constructs. Finally, the construct relationships in the inner model are assessed.

##### 4.4.2.2 Data Preparation

Having correctly named and labelled the variables in the source data using SPSS 24 (IBM Corporation, 2016), a new variable called *SDFeelings* was computed to determine the standard deviation across the 12 *feelings* items (*f1-f12*). Whilst the straight-line detection script in the survey software eliminated any responses that contained the same rating across all 12 items, for the reasons described in section 3.6.3, any cases showing a standard deviation of  $<0.5$  across the feelings indicators were also eliminated to minimise potential response bias in the final dataset. A total of 11 cases for which *SDFeelings*  $\leq 0.5$  were eliminated from the dataset. As per the reference studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014), the negative feelings indicators *f1*, *f3*, *f4*, *f6*, *f7*, *f8*, *f10* were then recoded into new variables and reverse scored—*f1Rev* (annoyed), *f3Rev* (irritated), *f4Rev* (frustrated), *f6Rev* (sad), *f7Rev* (disgusted), *f8Rev* (uneasy), *f10Rev* (nervous).

The data was inspected for outliers and normality prior to proceeding with the PLS-SEM procedure. Again, the multivariate outlier detection process selected was the Mahalanobis distance, which was computed into a new variable *MAH\_1* using all 72 indicators as independent variables (Meyers et al., 2013). Having consulted the Critical Values Table for  $df=72$  (Meyers et al., 2013), the critical value of 114.835 was referenced, and a total of 16 cases with a Mahalanobis distance value greater than or equal to this figure were removed from the

dataset. Although lack of normality in variable distributions has less severe effects for PLS-SEM, univariate normality will help establish, although not guarantee multivariate normality (Hair, Anderson, Tatham, & Black, 1998), so the data was inspected for skewness and kurtosis values of between  $-1$  and  $+1$  (Hair et al., 2014). All indicators returned skewness values within the acceptable range; however, several showed slight kurtosis. The *core service* indicators *cs2* and *cs4* were mildly leptokurtic at 1.2 and 1.1 respectively, three *feelings* indicators, *f3Rev*, *f4Rev* and *sf7Rev* all returned slightly platykurtic values of  $-1.1$ , and *f9* was slightly leptokurtic (1.2). As these deviations were relatively minor and PLS-SEM is more resilient to non-normal data than other SEM methods (Nitzl, 2016; Ringle et al., 2012), the variables were retained for further analysis.

#### 4.4.2.3 Sample Characteristics

Following the removal of cases that showed response bias and outliers, a total of 163 cases remained. The demographic distribution of the cases remaining in the sample is provided in Table 9, in which the collected data is compared to the target quotas. It is evident in this comparison that the frequencies collected in the Australian university student sample approximate the target quotas drawn from the Department of Education and Training (2015). Quotas collected for gender, level of study and broad field of education can therefore be described as roughly characteristic of the Australian university student population.

**Table 9. Sample Frequencies Compared to Quotas**

TARGET QUOTA				SAMPLE			
Gender				Gender			
Male	44%	Female	56%	Male	45%	Female	55%
Level of Study				Level of Study			
Undergraduate	74%	Postgraduate	26%	Undergraduate	75%	Postgraduate	25%
Broad Field of Education				Broad Field of Education			
Arts and Social Sciences			39%	Arts and Social Sciences			37%
Management and Commerce			22%	Management and Commerce			21%
Health			18%	Health			18%
Engineering, Architecture and Information Technology			12%	Engineering, Architecture and Information Technology			15%
Natural and Physical Sciences			9%	Natural and Physical Sciences			9%
<b>TOTAL</b>			<b>100%</b>	<b>TOTAL</b>			<b>100%</b>

#### 4.4.2.4 Outer Model Assessment

Following the initial inspection and cleansing of the data in SPSS 24 (IBM Corporation, 2016), it was imported into SmartPLS 3 (Ringle et al., 2015) for further analysis. The data file was applied to the same model set-up used in the pilot, with Mode A being used for the reflective constructs, and Mode B for formative constructs (Becker et al., 2012). The PLS algorithm was run using the default path weighting scheme and 300 maximum iterations as recommended.

Table 10 below shows the results, including those for Chronbach's alpha, composite reliability, loadings and convergent validity (AVE).

**Table 10. Outer Model Convergent Validity and Reliability – Initial Run**

First Order Construct	Loadings Range	Composite Reliability	Chronbach's Alpha	Convergent Validity (AVE)
Brand Name	0.753-0.880	0.922	0.893	0.702
Price Value	0.866-0.880	0.923	0.898	0.764
Servicescape	0.838-0.866	0.914	0.874	0.726
Core Service	0.803-0.851	0.919	0.891	0.695
Employee Service	0.753 -0.830	0.927	0.909	0.646
Feelings	<b>0.171</b> -0.786	0.782	0.837	<b>0.269</b>
Self-Image Congruence	0.781-0.870	0.884	0.825	0.656
Controlled Communications	0.805-0.887	0.937	0.919	0.713
Uncontrolled Communications	<b>0.651</b> -0.805	0.931	0.918	0.575
Satisfaction	0.799-0.877	0.923	0.896	0.707
Brand Attitude	0.819-0.866	0.925	0.899	0.712
Brand Loyalty	0.765-0.888	0.919	0.890	0.696

The results show all constructs possess internal consistency reliability, returning a Chronbach's alpha of  $\geq 0.7$  (George & Mallery, 2003). The composite reliability for all the outer latent constructs fall within the range of 0.7–0.9, which is regarded as satisfactory for exploratory research (Hair et al., 2014). Although most indicators' outer loadings have a value exceeding the acceptable threshold for reliability of 0.7 (Garson, 2016; Hair et al., 2014), several items fall short of this minimum requirement. These include one item from the *uncontrolled communications* scale, *uc1*, which had a loading of 0.651, and all the reverse scored negative *feelings* items: *f1Rev* (annoyed) – 0.349; *f3Rev* (irritated) – 0.342; *f4Rev* (frustrated) – 0.376; *f6Rev* (sad) – 0.236; *f7Rev* – 0.171 (disgusted); *f8Rev* (uneasy) – 0.239; and *f10Rev* (nervous) – 0.289. Furthermore, because seven of the 12 *feelings* indicators do not meet the reliability criterion, convergent validity is not established at the *feelings* construct level, with an AVE of only 0.269 being achieved—well short of the threshold of 0.5 (Hair et al., 2014).

As all the negative *feelings* indicators have loadings below the recommended threshold, this suggests that, at a conceptual level, the reverse scored negative *feelings* indicators do not *reliably* measure the same construct as the positive *feelings* indicators. This is also reflected in the standard deviations and standard errors of the *feelings* indicators (Table 11). The greater standard errors for the negative *feelings* variables demonstrate a more highly varied response on the related survey items, suggesting greater disagreement among respondents on these items, which affects their reliability, resulting in their lower loadings (Rumsey, 2016). Acknowledging that a smaller sample is justified by the exploratory nature of the study, it is possible the more variable response for the negative *feelings* indicators could result from the relatively small



number of cases (N=163), and the results obtained for the *feelings* indicators would likely be stabilised if a much larger sample were taken in a future study (Rumsey, 2016).

**Table 11. Descriptive Statistics for the Feelings Indicators**

Indicator Name	N	Minimum	Maximum	Mean	Std. Error	Std. Deviation
f1Rev - Annoyed	163	1.00	7.00	4.6012	.13413	1.71248
f2 - Happy	163	1	7	5.01	.085	1.080
f3Rev - Irritated	163	1.00	7.00	4.5031	.13380	1.70827
f4Rev - Frustrated	163	1.00	7.00	4.4540	.13375	1.70765
f5 - Pleased	163	2	7	4.94	.088	1.126
f6Rev - Sad	163	1.00	7.00	4.8282	.13666	1.74482
f7Rev - Disgusted	163	1.00	7.00	5.0859	.15209	1.94174
f8Rev - Uneasy	163	1.00	7.00	4.6810	.14864	1.89771
f9 - Good	163	1	7	5.12	.083	1.062
f10Rev - Nervous	163	1.00	7.00	4.1350	.12687	1.61977
f11 - Confident	163	2	7	4.80	.085	1.084
f12 - Impressed	163	2	7	4.75	.088	1.119

Based on these initial results, the indicators with outer loadings of  $<0.7$  were removed. For the negative *feelings* indicators this involved an iterative process in which they were removed in ascending loading order, and the PLS algorithm was re-run after each removal to assess whether the requisite AVE and loadings were achieved for the remaining indicators (Gaskin, 2017; Hair et al., 2014). This process resulted in all negative *feelings* indicators being removed from the model, leaving *f2* (happy), *f5* (pleased), *f9* (good), *f11* (confident), and *f12* (impressed). The results appear in Table 12.

**Table 12. Outer Model Convergent Validity and Reliability – Second Run**

First Order Construct	Loadings Range	Composite Reliability	Chronbach's Alpha	Convergent Validity – (AVE)
Brand Name	0.754-0.880	0.922	0.893	0.702
Price Value	0.866-0.881	0.928	0.898	0.764
Servicescape	0.839-0.866	0.914	0.874	0.726
Core Service	0.804-0.851	0.919	0.890	0.695
Employee Service	0.754 -0.830	0.927	0.909	0.646
Feelings	0.720-0.829	0.881	0.831	0.597
Self-Image Congruence	0.780-0.869	0.884	0.825	0.656
Controlled Communications	0.806-0.887	0.937	0.919	0.713
Uncontrolled Communications	0.730-0.826	0.932	0.918	0.603
Satisfaction	0.799-0.877	0.923	0.896	0.707
Brand Attitude	0.819-0.866	0.925	0.899	0.712
Brand Loyalty	0.765-0.888	0.919	0.890	0.696

For the remaining *feelings* indicators, the outer loadings ranged between 0.720–0.829, and an AVE of 0.597 was achieved for the *feelings* construct. Notwithstanding the removal of the negative indicators from the *feelings* measurement model, the five indicators retained still

exceed the minimum recommended items per reflective construct to achieve reliability and validity (Hair et al., 2014; Wold, 1982). The *uncontrolled communications* indicator, *uc1*, which had a loading of only 0.651 was also removed, leaving nine indicators in this construct, and increasing the AVE for *uncontrolled communications* from 0.575 to 0.603.

The results for discriminant validity appear in Tables 13 and 14 respectively for the Fornell-Larcker criterion and HTMT. The results for both tests show that discriminant validity is achieved between the constructs, with no construct loading more strongly with any other construct than with itself in the Fornell-Larcker test, and no construct having a cross-loading of  $\geq 0.9$  in the HTMT test (Garson, 2016).

**Table 13. Discriminant Validity – The Fornell-Larcker Criterion.**

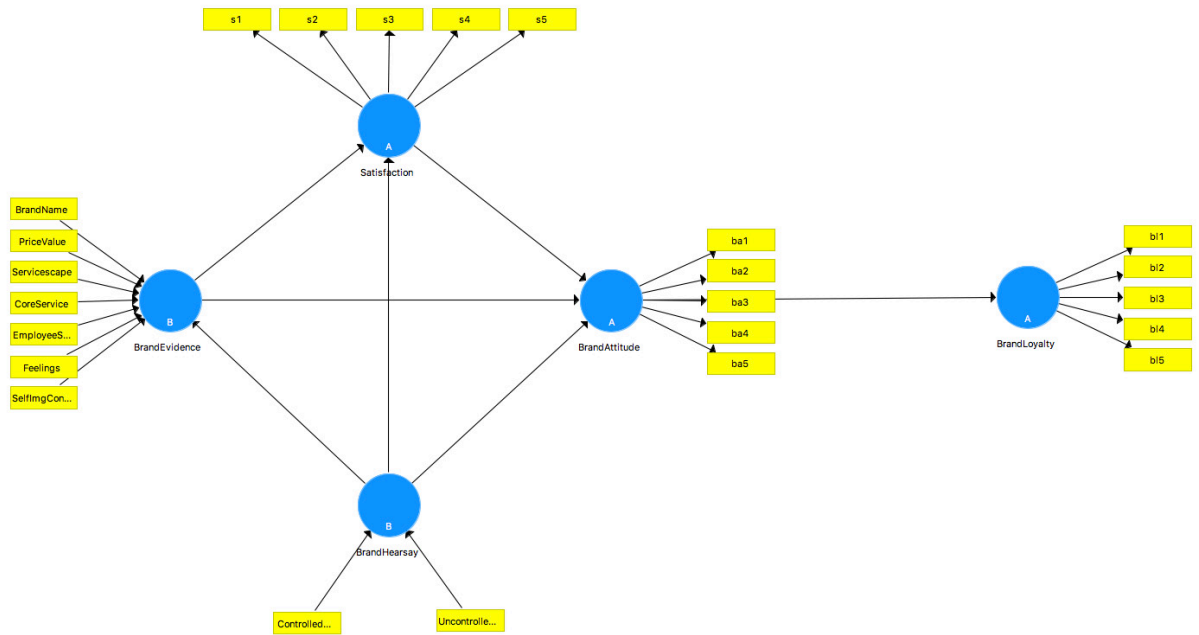
	BA	BL	BN	CC	CS	ES	F	PV	S	SIC	SS	UC
Brand Attitude (BA)	<b>0.844</b>											
Brand Loyalty (BL)	0.773	<b>0.834</b>										
Brand Name (BN)	0.343	0.304	<b>0.838</b>									
Controlled Comms. (CC)	0.577	0.546	0.499	<b>0.845</b>								
Core Service (CS)	0.695	0.649	0.368	0.536	<b>0.834</b>							
Employee Service (ES)	0.686	0.607	0.372	0.619	0.707	<b>0.804</b>						
Feelings (F)	0.530	0.507	0.363	0.674	0.564	0.606	<b>0.773</b>					
Price Value (PV)	0.400	0.357	0.406	0.505	0.575	0.538	0.485	<b>0.874</b>				
Satisfaction (S)	0.762	0.776	0.322	0.566	0.67	0.666	0.627	0.497	<b>0.841</b>			
Self-Image Congruence (SIC)	0.592	0.567	0.551	0.708	0.593	0.543	0.609	0.571	0.536	<b>0.810</b>		
Servicescape (SS)	0.613	0.508	0.484	0.475	0.679	0.598	0.486	0.536	0.507	0.526	<b>0.852</b>	
Uncontrolled Comms (UC)	0.383	0.46	0.431	0.628	0.429	0.498	0.599	0.478	0.487	0.562	0.366	<b>0.777</b>

**Table 14. Discriminant Validity – Heterotrait-Monotrait (HTMT).**

	BA	BL	BN	CC	CS	ES	F	PV	S	SIC	SS	UC
<b>Brand Attitude (BA)</b>												
<b>Brand Loyalty (BL)</b>	0.860											
<b>Brand Name (BN)</b>	0.378	0.342										
<b>Controlled Comms. (CC)</b>	0.635	0.600	0.554									
<b>Core Service (CS)</b>	0.775	0.724	0.408	0.591								
<b>Employee Service (ES)</b>	0.755	0.670	0.417	0.678	0.782							
<b>Feelings (F)</b>	0.602	0.581	0.418	0.764	0.651	0.692						
<b>Price Value (PV)</b>	0.436	0.392	0.459	0.560	0.641	0.593	0.553					
<b>Satisfaction (S)</b>	0.848	0.865	0.357	0.620	0.745	0.734	0.717	0.545				
<b>Self-Image Congruence (SIC)</b>	0.675	0.652	0.639	0.812	0.683	0.622	0.720	0.664	0.612			
<b>Servicescape (SS)</b>	0.689	0.574	0.542	0.529	0.770	0.667	0.567	0.604	0.569	0.612		
<b>Uncontrolled Comms (UC)</b>	0.411	0.500	0.483	0.674	0.463	0.534	0.670	0.525	0.522	0.64	0.400	

In accordance with the two-stage PLS-SEM approach for type-two models, once reliability and validity is confirmed in the first stage, latent variable scores obtained from the first order constructs are used as formative indicators for the model's second order constructs (Amaro & Duarte, 2016; Hair et al., 2014). This second stage will allow the relative weights of attributes that cause the formative *brand hearsay* and *brand evidence* constructs to be assessed, and for the hypothesised relationships within the structural model to be tested. The stage two model set-up can be seen in Figure 5. When comparing Figure 5 to Figure 4, it is evident that the blue circles that previously represented the first order reflective constructs underlying *brand hearsay* and *brand evidence*, have been replaced with yellow rectangles. This shows that these first order constructs have now become formative indicators being made up of the scores obtained from the latent variables they replace in the model.

**Figure 5: Stage 2 Outer and Structural Model in SmartPLS 3**



Whereas measures such as loadings, composite reliability and AVE are used for the assessment of reflective models, evaluation approaches based on correlation patterns alone do not provide a complete analysis for formative models. Firstly, the establishment of content validity is particularly essential for formative measures (Hair et al., 2014), and their development must be based in theoretical grounding supported via thorough literature review (Diamantopoulos, Riefler, & Roth, 2008). This fundamental content validity requirement is addressed in the reference studies (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014), and in section 3.6.1 of the current study.

Secondly, multicollinearity among indicators is identified as an issue for formative models as, where it exists, it is impossible to assess the relative effects of individual variables on their respective constructs (Diamantopoulos et al., 2008), and it inflates standard errors and reduces the reliability of significance tests of independent variables (Garson, 2016). To eliminate multicollinearity as a potential issue among the *brand hearsay* and *brand evidence* indicators their VIF are inspected (Hair et al., 2012) for a coefficient of <4.0 (Garson, 2016). As the maximum VIF for *brand hearsay* and *brand evidence* were no higher than 1.651 and 2.799 respectively, multicollinearity was not found to be a problem.

Lastly, where outer loadings are used to evaluate indicator reliability for reflective measures, loadings, outer weights and their significance are assessed for formative measures (Hair et al.,

2012). Outer weights are the paths from the indicators to the composite variable, ranging in value from zero to one (Garson, 2016). Weights result from a multiple regression in which the formative indicators are the independent variables, and the latent variable is the dependent variable (Hair et al., 2014). The outer weights yielded in this process allow a comparison of the indicators' relative contribution to the dependent variable's  $R^2$  value of 1.0—no more than 100% of the formative construct's variance can be explained by its indicators. The assessment of the outer weights' significance involves a bootstrapping procedure from which the reported critical t-values can be evaluated alongside corresponding significance levels against a p-value cut-off (Garson, 2016). It is relevant to note that because the maximum outer weight is  $1/\sqrt{n}$  ( $n$ =number of indicators), weight values decline as the number of formative indicators increase, and with larger numbers of indicators (seven in the case of *brand evidence* is considered high), it is more likely that one or more indicators will return nonsignificant outer weights (Cenfetelli & Bassellier, 2009; Hair et al., 2014). However, nonsignificant weights alone are not necessarily indicative of poor measurement quality. Even if a formative indicator is not relatively important, if its outer loading is  $>0.5$  it may be considered of absolute importance to its construct, and it should be retained—especially if the theoretical conceptualisation strongly supports its retention (Cenfetelli & Bassellier, 2009; Hair et al., 2014).

To obtain the second stage results for the outer formative model, the bootstrapping procedure was run in SmartPLS 3 (Ringle et al., 2015) using settings deemed appropriate for an exploratory study: 1000 bootstrap sub-samples (Garson, 2016) with a significance level cut-off of 5% or  $\alpha=0.05$  (two-tailed test), and a corresponding t-value of 1.96 (Garson, 2016; Hair et al., 2014). The confidence interval level was set to Bias-Corrected and Accelerated to adjust for any bias and skewness (Garson, 2016), and the *no sign change* option was used as it results in the most conservative t-statistic and p-value outcomes (Hair et al., 2014). The results appear in Table 15.

A review of the outer weights for *brand hearsay* shows both indicators contribute significantly to the latent variable ( $p<0.05$ ;  $t\text{-value}>1.96$ ). *Controlled communications* makes the greater contribution at 0.816, whereas the weight for *uncontrolled communications* is 0.260. Both indicators also have loadings of  $\geq 0.773$ , being above the 0.5 threshold (Cenfetelli & Bassellier, 2009). For *brand evidence*, all indicators have loadings of  $>0.5$ , with *brand name* having the lowest loading at 0.523 and *employee service* having the highest at 0.872. Although the loadings are acceptably high overall, only four of the seven indicators have significant weights ( $p<0.05$ ;  $t\text{-value}>1.96$ ): *core service*=0.231, *employee service*=0.364, *feelings*=0.273, and *self-image congruence*=0.292. Although the *brand name*, *price value* and *servicescape* indicators have nonsignificant weights and make no relative contribution to *brand evidence*, they nevertheless

have loadings of >0.5. Given this, and that no theoretical overlap had been found between them in previous studies (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), it is recognised that these indicators still make an absolute contribution to the *brand evidence* construct (Cenfetelli & Bassellier, 2009). Furthermore, because these formative indicators together constitute the set of dimensions that make up the construct and dropping an indicator changes the meaning of the factor, indicators are not typically removed from formative models, even if they are nonsignificant (Garson, 2016). *Brand name*, *price value* and *servicescape* were therefore retained for analysis of the inner, structural model.

**Table 15. Weights for Formative Constructs Brand Hearsay and Brand Evidence**

Construct	Dimension	Weights	T-Statistics	P-Values	Loadings
Brand Hearsay	*Controlled Communications	0.816	7.999	0.000	0.979
	*Uncontrolled Communications	0.260	2.041	0.042	0.773
Brand Evidence	Brand Name	0.036	0.477	0.633	0.523
	Price Value	-0.036	0.503	0.615	0.630
	Servicescape	0.044	0.535	0.593	0.703
	*Core Service	0.231	2.479	0.013	0.838
	*Employee Service	0.364	5.036	0.000	0.872
	*Feelings	0.273	3.913	0.000	0.819
	*Self-Image Congruence	0.292	3.592	0.000	0.816

\*Indicates significance ( $p < 0.05$  and  $t\text{-value} > 1.96$ )

#### 4.4.2.5 Inner Model Assessment

Having established reliability and validity for the first order reflective constructs and the second order formative constructs in the outer model, the inner model estimates are then examined via variance-based, non-parametric evaluation criteria (Hair et al., 2012). The inner, structural model accounts for the relationships between the latent constructs as estimated by the path coefficients between them; thus allowing hypotheses H1–H7 to be tested. The PLS-SEM algorithm produces path coefficients varying from  $-1$  to  $+1$  with those closest to  $1$  being strongest (Garson, 2016); these are listed both for direct and indirect (mediated) effects. The cut-off for a substantial effect is a path coefficient of  $0.67$ , whereas  $0.33$  is considered moderate, and  $0.19$  is weak (Chin, 1998b). The primary criterion for the assessment of inner model quality is the  $R^2$  coefficient of determination, which is a measure of predictive accuracy for the model (Hair et al., 2014). For exogenous latent variables, the  $R^2$  measures their effect size on endogenous variables, and explains the percentage variance in those latent variables (Garson, 2016). For consumer behaviour studies, such as this, that aim to predict satisfaction or loyalty,  $R^2$  cut-off values of  $0.75$ ,  $0.5$  and  $0.25$  are considered to describe substantial, moderate or weak effects (Hair et al., 2014). The Stone-Geisser  $Q^2$  statistic is also used to determine the predictive relevance of the PLS-SEM model for its endogenous variables (Garson, 2016), with relative measures of  $0.02$ ,  $0.15$  and  $0.35$  indicating small, medium or large predictive relevance (Hair et al., 2014). As the PLS-SEM procedure for the inner model is a form of linear regression, it is

necessary to test for multicollinearity, which may be present if the  $R^2$  is  $>0.8$  or the VIF is  $>5$  (Garson, 2016). Lastly, the significance of the standardised path coefficients are assessed using bootstrapping procedures and a two-tailed test, with a critical value of  $t=1.96$  and a significance level of  $\alpha=0.05$  (Hair et al., 2012).

To assess the VIF and  $R^2$  statistics the PLS-SEM procedure was run in SmartPLS 3 (Ringle et al., 2015) using the path setting and 300 maximum iterations, followed by the blindfolding procedure with the default omission distance of 7 to produce the  $Q^2$ . Multicollinearity was initially assessed for the inner model and found not to be a problem, with the VIF statistic returning values of well below 5—the cross-loading between *brand attitude* and *brand hearsay* being highest at 2.508. The results of the  $R^2$  and  $Q^2$  values can be found in Table 16. All  $R^2$  measures of predictive accuracy sat acceptably above 0.5 in the range between moderate and strong (Hair et al., 2014). As illustrated in Figure 6, these  $R^2$  values mean that 61.2% of the variance in *brand evidence* can be explained by *brand hearsay*; 54.9% of the variance in *satisfaction* can be explained by *brand evidence*; 66% of the variance in *brand attitude* can be accounted for by *brand evidence* and *satisfaction*; and *brand attitude* is responsible for 59.7% of the variance in *brand loyalty*. The  $Q^2$  statistic shows the model to have a strong predictive relevance for all of the endogenous variables given a range of 0.322–0.549 (Hair et al., 2014), with satisfaction being predicted most strongly at 0.549.

**Table 16. Structural Model Results –  $R^2$  and  $Q^2$**

Endogenous Latent Variable	$R^2$	$Q^2$
Brand Evidence	0.612	0.322
Satisfaction	0.549	0.549
Brand Attitude	0.660	0.361
Brand Loyalty	0.597	0.386

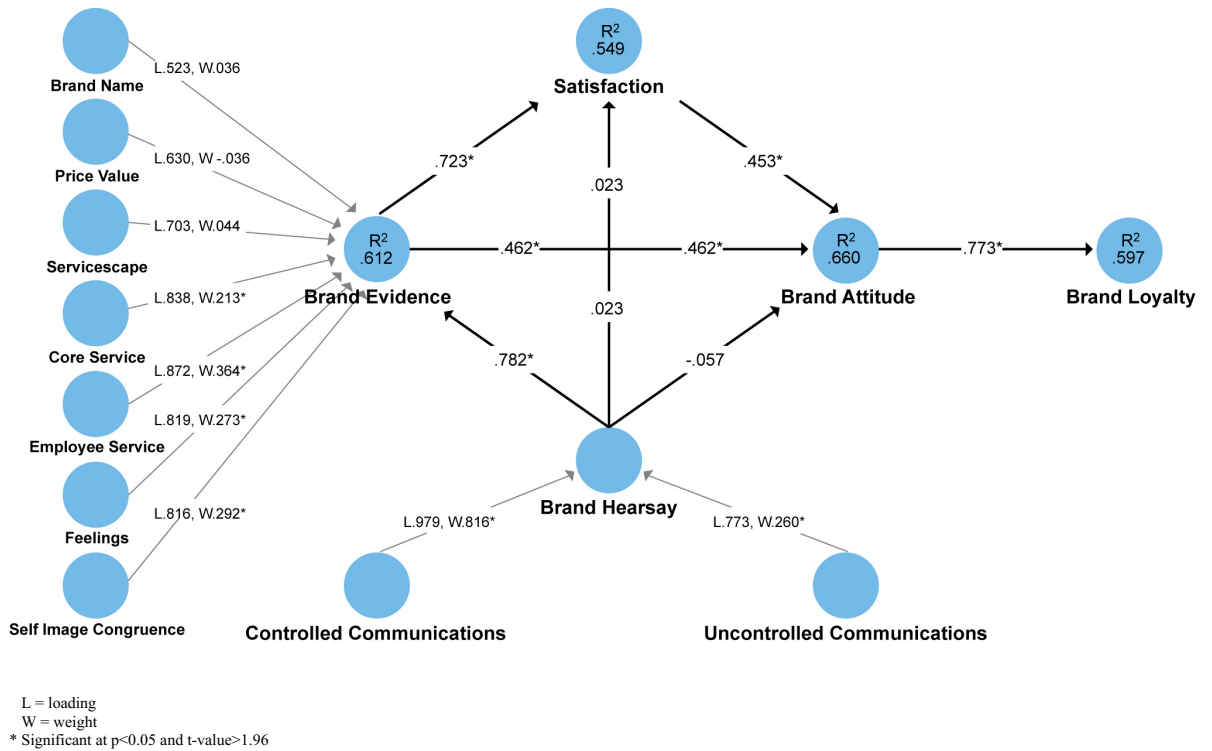
The results of the inner model PLS estimation appears in Table 17 and are illustrated graphically in Figure 6, which includes loadings (L), weights (W), path coefficients noted in-line on the paths, and  $R^2$  results which appear on the endogenous latent constructs.

**Table 17. Structural Model Results - Direct Effects**

Hypothesis	Path Coefficient	T-Statistic	P-Value
H1: Brand Evidence → Satisfaction*	0.723	8.227	0.000
H2: Brand Evidence → Brand Attitude*	0.462	4.883	0.000
H3: Brand Hearsay → Satisfaction	0.023	0.239	0.811
H4: Brand Hearsay → Brand Attitude	-0.057	0.752	0.452
H5: Brand Hearsay → Brand Evidence*	0.782	20.405	0.000
H6: Satisfaction → Brand Attitude*	0.453	5.943	0.000
H7: Brand Attitude → Brand Loyalty*	0.773	21.767	0.000

\*Indicates significance at  $p<0.05$  and  $t\text{-value}>1.96$

**Figure 6: Second Step PLS-SEM Model Results**



The bootstrapping procedure reported inner path coefficients ranging in value from -0.057–0.782, with most relationships showing a strong path coefficient except for the path from *brand hearsay* to *satisfaction*, and the path from *brand hearsay* to *brand attitude*; these paths were also found to be nonsignificant. Table 17 contains the bootstrapping results, and Table 18 provides a summary of hypothesis results. Accordingly, the following hypotheses are supported as direct effects: H1, H2, H5, H6, H7. The aforementioned paths exceed a t-value of 1.96 and are significant p<0.05; furthermore, their path coefficients exceed a moderate strength categorisation, ranging from H6 having a path coefficient that approaches strong at 0.453, and a very substantial result of 0.782 achieved for H5 (Chin, 1998b). The direct effects results for the inner model indicate that the null hypotheses for H3 and H4 cannot be rejected as neither path is significant. As the path coefficient for H3 is 0.023, and H4 has a coefficient of only -0.057, neither comes close to the threshold of 0.19 that is considered to indicate a weak relationship (Chin, 1998b). For H3 and H4, the null hypotheses are therefore retained.

- H3<sub>0</sub>: Brand hearsay is not positively related to satisfaction.
- H4<sub>0</sub>: Brand hearsay is not positively related to brand attitude.



**Table 18. Summary of Hypothesis Results**

Hypothesis	Supported / Not Supported
H1: Brand Evidence → Satisfaction*	Supported
H2: Brand Evidence → Brand Attitude*	Supported
H3: Brand Hearsay → Satisfaction	Not supported
H4: Brand Hearsay → Brand Attitude	Not supported
H5: Brand Hearsay → Brand Evidence*	Supported
H6: Satisfaction → Brand Attitude*	Supported
H7: Brand Attitude → Brand Loyalty*	Supported

\*Indicates significance at  $p < 0.05$  and  $t\text{-value} > 1.96$

## 4.5 Chapter Summary

Chapter 4 has described the PLS-SEM procedure as it was applied to the data collected for this study, provided an analysis of the statistical outputs to explain the operationalisation of the constructs, and tested the model relationships hypothesised in Chapter 3. Following a brief review of the theoretical model specification and two-stage PLS-SEM analytic approach (Hair et al., 2014), this chapter proceeded to the model estimation and analysis.

The analysis incorporated a pilot study in which the survey instrument was initially tested by assessing the reliability and validity of the questionnaire items, and factorability of the indicators for the first order constructs. The pilot results indicated all questionnaire items could be retained, but that refinements could be made to the survey set-up to automatically reject straight-line responses. Once these adjustments were made, data collection proceeded for the main study.

In the main study both the outer measurement model and hypothesised inner structural model were empirically tested. The outer model results showed all *constructs* to have internal consistency reliability. However, at an indicator level, some loadings fell short of the acceptable threshold for convergent validity (Garson, 2016; Hair et al., 2014) and were subsequently removed. Having removed the problematic items, convergent validity, reliability and discriminant validity were confirmed for all outer model constructs. Furthermore, VIF tests showed multicollinearity not to be an issue among the lower order indicators for *brand hearsay* and *brand evidence*.

In accordance with the two-stage PLS-SEM approach for type-two models, latent variable scores were then obtained from the first order constructs and used as formative indicators for the model's second order constructs (Amaro & Duarte, 2016; Hair et al., 2014). The subsequent bootstrapping procedure showed that both *controlled communications* ( $w=0.816$ ,  $p<0.05$ ) and *uncontrolled communications* ( $w=0.260$ ,  $p<0.05$ ) contribute significantly to the latent variable *brand hearsay*. However, for *brand evidence* only four of the seven indicators have significant weights at  $p<0.05$  and a  $t\text{-value}>1.96$ —namely *core service*=0.231, *employee service*=0.364,

*feelings*=0.273, and *self-image congruence*=0.292. Nevertheless, as the other indicators—*brand name*, *price value* and *servicescape*—all returned bivariate loadings of >0.5, they were considered to make an absolute contribution to the *brand evidence* construct (Cenfetelli & Bassellier, 2009).

Following the assessment of the outer model results, the inner model was estimated. Multicollinearity was found not to be a problem. All  $R^2$  measures of predictive accuracy sat acceptably above 0.5 in the range between moderate and strong, indicating that over half the variance in each of the latent constructs could be explained by the underlying framework (Hair et al., 2014). The  $Q^2$  results all exceeded 0.3, indicating a good predictive relevance (Hair et al., 2014). The PLS estimation for the inner model paths supported hypotheses H1, H2, H5, H6, H7 for which strong-to-substantial path coefficients of 0.453–0.782 were returned; however, the null hypotheses for H3 and H4 could not be rejected as neither path is significant ( $t\text{-value} > 1.96$ ;  $p < 0.05$ ).

In Chapter 5, these results will be further discussed and interpreted in relation to the theory. This final chapter will draw conclusions from the findings about the research questions and problem, discuss the implications for theory and practice, outline the limitations of the current study, and identify opportunities for future research.

## CHAPTER 5: CONCLUSIONS AND IMPLICATIONS

### 5.1 Introduction

In consideration of the controversies and deficiencies identified within the extant higher education brand equity literature, the objectives of this dissertation are to better understand the drivers of CBBE in Australian universities, and the process through which its ultimate expression, brand loyalty, is created. The study also explores whether brand equity creation is the same in higher education as it is for other service industries. This research is undertaken with the intent of contributing to the higher education and service branding literature and enabling universities to better understand and manage their brand's performance. Specifically, the gaps in the literature identified as needing to be addressed can be summarised by the following research problem.

*What are the attributes and dimensions that influence student perceptions of Australian university brands, and what is the process of customer-based brand equity creation in this higher education context? How does this compare with other service industries?*

The research problem gives rise to the following three research questions.

- RQ1. Which university brand attributes are meaningful to students?*
- RQ2. What is the relative influence of the attributes and dimensions of the university brand on perceived brand favourability, and how does this compare with other services?*
- RQ3. Is the process through which students develop loyalty towards university brands the same as for other services?*

A conceptual model derived from the service branding literature (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009) was empirically tested in the Australian university setting using an adapted measurement scale. Chapter 4 presented the PLS-SEM analysis procedure and results, and in Chapter 5 the results are interpreted and justified in view of existing services and higher education branding literature. Conclusions are drawn about the proposed model, the hypotheses, and each of the research questions, as well as the overarching research problem.

Notwithstanding the exploratory nature of the research, the results suggest brand attributes and dimensions proposed in the adapted model have relevance in the higher education setting of the current study. The discussion illustrates how the process through which brand equity (as ultimately expressed through brand loyalty) is created in the higher education context of the

current study is substantially the same as that of the reference industries (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). However, when comparing the current results with those obtained in studies using the SBV or SBL model in other service industry settings (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), variances in the relative importance of brand attributes and dimensions are highlighted. It is argued that these variances can be explained by contextual factors; an assertion supported by the services and higher education branding literature.

This chapter commences with a discussion of the results and the conclusions that can be drawn from them in view of the existing theory. Following this, an overview is provided of the contribution this study makes to the services and higher education branding theory, and the managerial implications relating to the conclusions are presented. Finally, the limitations of the study will be outlined and opportunities for further research identified.

## **5.2 Discussion of the Conceptual Framework**

This section appears in three parts. Firstly, the research questions are addressed by examining the results for the outer and inner model. Section 5.2.1 discusses the outer model and draws conclusions about the proposed university brand attributes and their relative influence, as referenced in research questions one and two. In section 5.2.2 the inner, structural model results are discussed and conclusions drawn about the relative influence of brand dimensions and hypothesised relationships between constructs, addressing research questions two and three. Lastly, in section 5.2.3 conclusions are drawn about the overarching research problem.

### **5.2.1 The Outer Model Brand Attributes**

This section examines the research results for the outer model to provide answers to research questions one and two. The first research question queries which brand *attributes* are meaningful to students when evaluating higher education brands. The second question seeks to identify the relative influence of brand attributes on perceptions of university brand favourability and how these might compare with other service industries. When interpreted in conjunction with extant branding theory, the results obtained in the outer model analysis offer insights to both these questions and confirm that all proposed attributes in the model for *brand hearsay* and *brand evidence* support the formation of university brand perceptions.

Both proposed *brand hearsay* attributes—*controlled communications* and *uncontrolled communications*—returned significant weights results, indicating their relative importance to

the formation of positive university brand perceptions. However, not all attributes related to the *brand evidence* measurement model were found to have significant weights. The results show *employee service* to have the highest significant weight and contribute most to *brand evidence*, followed by *self-image congruence*, *feelings*, and *core service*. Although neither *servicescape*, *price value* nor *brand name* have significant weights, they all have loadings above the threshold of 0.5 at which a formative indicator is considered to have absolute importance to its latent construct (Cenfetelli & Bassellier, 2009; Hair et al., 2014). It will therefore be argued that *brand hearsay* attributes can be divided into those that have significant weights and are central to the educational service experience, and those that make an absolute but not relative contribution and can be considered supplementary (Ng & Forbes, 2009). Whilst the supplementary attributes do not in themselves result in student satisfaction, they can, however, be thought of as hygiene factors that when not meeting basic needs can cause dissatisfaction (Herzberg, 1966; Lovelock, Patterson, & Wirtz, 2011; Ng & Forbes, 2009).

A comparison of results across empirical studies using the SBV or SBL models (Table 19) suggests the relative importance of brand attributes differs across the service sectors examined (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). As the discussion proceeds to address research question two, it is posited that service sector context is largely responsible for these variances. The following sections examine the results for each of the first order latent constructs (attributes) for *brand hearsay* and *brand evidence*, and interpret them with reference to the theory.

**Table 19. Comparison of Brand Attribute Importance for SBV / SBL Studies**

Study	Current Study	Krystallis & Chrysochou (2014)		Pillossof, Nickel, & Krystallis (2009)	Grace and O'Cass (2005)
Country	Australia	Denmark & Norway		Denmark	Australia
Service Sector(s)	Higher Education	Airline**	Banking**	Airline	Banking and Retail
<b>Attributes</b>					
<b>Brand Hearsay</b> (Descending Weight)	Controlled Communications*	Controlled Communications*	Controlled Communications*	Controlled Communications*	Controlled Communications*
	Uncontrolled Communications*	Uncontrolled Communications	Uncontrolled Communications	Uncontrolled Communications	Uncontrolled Communications
<b>Brand Evidence</b> (Descending Weight)	Employee Service*	Feelings*	Core Service*	Feelings*	Price Value*
	Self-Image Congruence*	Core Service & Price Value (equal weights)*	Feelings and Price Value (equal weights)*	Core Service*	Core Service*
	Feelings*			Price Value*	Servicescape*
	Core Service*	Self-Image Congruence*	Employee Service*	Self-Image Congruence*	Feelings*
	Servicescape	Employee Service*	Servicescape*	Employee Service*	Employee Service*
	Price Value	Servicescape*	Brand Name	Servicescape*	Self-Image Congruence*
	Brand Name	Brand Name	Self-Image Congruence	Brand Name	Brand Name

\*Indicates significant ( $p < 0.5$ ;  $t > 1.96$  two-tailed test)

\*\* Separate results reported for the two industries included in the study

#### 5.2.1.1 *Controlled Communications*

The results returned significant weights for both formative constructs underlying *brand hearsay*. However, the *controlled communications* attribute has a far greater weight than *uncontrolled communications*, revealing it to be the more important source of information for students. The stronger contribution of *controlled communications* to *brand hearsay* is consistent with the findings of Grace and O’Cass (2005), Pillossof et al. (2009) and Krystallis and Chrysochou (2014)—see Table 19. This result suggests advertising is key to influencing student perceptions of university brands and finds support in Berry (2000), who posits that paid promotion is crucial to helping make abstract, complex service concepts tangible. Furthermore, Parasuraman et al. (1985) suggest that advertising can act as a reliever of perceived service risk, especially where that service requires substantial resource, time or emotional commitments, and where the outcome of that service cannot be known before it is performed and experienced. This is the case for students who commit considerable financial resources, time and effort to completing their studies with their selected institution, but cannot be assured of graduation or career outcomes at the time of commencement.

#### 5.2.1.2 *Uncontrolled Communications*

The results show that *uncontrolled communications* make a significant contribution to *brand hearsay*. This finding is inconsistent with the reference studies, which found *uncontrolled communications*, including word-of-mouth and publicity, make no significant contribution to *brand hearsay* (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). However, it is argued that this variance stems from the differing characteristics of the service industries under examination, with the current study being set in a higher education context and comparison studies set in the banking, retail and airline industries (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009).

The significance of *uncontrolled communications* in the Australian higher education context of the current study finds support in the higher education literature, with several higher education branding studies finding that word-of-mouth makes a significant contribution to university brand perceptions (Goi et al., 2014; Ivy, 2008; Khanna et al., 2014; Mourad et al., 2011). Furthermore, the advising role of family and friends in university selection has been well documented in the higher education marketing literature (Dao & Thorpe, 2015; Johnston, 2010; Joseph, Mullen, & Spake, 2012), as has the role of publicity in league tables which is an important source of information that can act as a risk reliever and support prospective students in the relatively complex university selection process (Gibbons, Neumayer, & Perkins, 2015; Ivy, 2001). The difficulty of this selection process results from: the intangibility of higher

education services; problems comparing university offerings; the complex structure of degree programs; and the relatively high perceived risk associated with committing to higher education programs due to the significant time, effort and money committed to attaining a degree (Chapleo, 2015; Hemsley-Brown & Oplatka, 2006), the high variability of educational outcomes (Hemsley-Brown & Oplatka, 2006; Mazzarol & Soutar, 1999), and the importance of selecting the “right” institution and course to realise the potentially life changing outcomes of tertiary study (Binsardi & Ekwulugo, 2003; Chapleo, 2015; Lowrie, 2007).

From a broader services branding perspective, the finding that *uncontrolled communications* are significant but have a lesser influence than *controlled communications* is consistent with Berry (2000). He suggests word-of-mouth and publicity are indeed of importance for services, but are secondary to advertising in the formation of service brand perceptions (Berry, 2000).

#### 5.2.1.3 Employee Service

The results show *employee service* has the highest significant weight of all the *brand evidence* indicators. The primary importance of *employee service* to *brand evidence* in the current higher education context may be a factor of the sustained and repeated contact between student and faculty, such that the educational experience can be characterised as a co-creation between student and faculty (Chapleo, 2015; Eagle & Brennan, 2007; Hemsley-Brown & Oplatka, 2006; Mazzarol & Soutar, 1999).

The importance of *employee service* is additionally supported by the higher education literature that shows faculty are not only integral to the teaching and learning process (Eagle & Brennan, 2007), but that students expect them to be knowledgeable and supportive, and the effectiveness of their instruction has a significant impact on student satisfaction (Elliott & Healy, 2001). These concepts are further extended by Jillapalli and Jillapalli (2014), who find that university professors can indeed possess their own CBBE. Employee service, or equivalents such as importance of faculty knowledgeability and supportiveness, are also highlighted in several higher education brand studies reviewed in Chapter 2 (Bennett & Ali-Choudhury, 2009; Goi et al., 2014; Mourad et al., 2011; Pinar et al., 2014).

Whereas *employee service* is found to be of utmost importance in the current Australian university context, Grace and O’Cass (2005) find *price value* to be most important in their study of the banking and retail sectors. Their result may have been influenced by half their sample being retail shoppers, for whom interactions with staff are usually fleeting, the relationship transactional in nature, and product acquisition at the lowest price is the main focus (Grace & O’Cass, 2005). By comparison, in the airline studies undertaken by Krystallis and Chrysochou (2014) and Pillosos et al. (2009) *feelings* were found to carry the greatest weight of the *brand*

*evidence* indicators. This may be because airline customers are only exposed to limited components of the overall service, and in situations characterised by uncertainty, a lack of information and higher perceived risk, the impact of emotions may be more pronounced and become the basis for service evaluation (Jayanti & Jayanti, 1995). By comparison, in the study set in banking services, which are transactional in nature and where customers have relatively little contact with employees, *core service* returned the greatest weight, indicating that bank customers focus primarily on the process and structural content of service delivery (Krystallis & Chrysochou, 2014).

#### 5.2.1.4 Self-Image Congruence

The results of the current study indicate that *self-image congruence* is the second most important contributor to higher education *brand evidence*. This result can be interpreted with reference to Sirgy (1982) and Aaker (1996) who suggest consumers purchase goods and services as a means of expressing their own identity, and brands are considered to possess a “personality”, wherein this symbolic attribute is, in part, a reflection of the typical brand user (Aaker, 1999). Through contact with a brand and people associated with it, consumers recognise a convergence between their self-image and that of the typical brand user, motivating greater consumption of the brand’s products and services, and positively influencing satisfaction and brand loyalty (Aaker, 1999; Sirgy, 1982; Sirgy et al., 1997).

Self-image congruence can occur at each of four aspects: *the actual self-image* or how consumers see themselves; *the ideal self-image*, which is how consumers would like to see themselves; *the social self*, which is how consumers believe others actually see them; and the *ideal social self*, or how consumers would like others to see them (Sirgy, 1982). These aspects are affected by self-motive socialness and extent of self-enhancement sought, with the strongest self-image congruency effects being seen where private self-motives and enhancement self-motives are combined (Aguirre-Rodriguez, Bosnjak, & Sirgy, 2012). Private self-motives motivate consumption of brands congruent with the ideal self and ideal social self; whereas enhancement-type motives stimulate consumers to seek brands that support the actualisation of the ideal self and ideal social self (Aguirre-Rodriguez et al., 2012).

Considering the theory, it can be argued that people pursuing university study are responding to self-actualisation motives. These include both a private motive that is the ideal or aspirational self and a need for there to be a fit between this and the personality of the brand, and an enhancement self-motive that supports the achievement of the desired, future state (Aguirre-Rodriguez et al., 2012), namely to be knowledgeable in their chosen field and enhance career prospects. Central to explaining the strong relative weighting of *self-image congruence* in the



results is the finding of Aguirre-Rodriguez et al. (2012) that when the ideal self-motive and enhancement self-motive are strongly combined, self-image congruence has the greatest influence on consumer attitudes and behaviours towards brands.

This theory may also explain the lower relative weighting of *self-image congruence* in the airline and retail industries (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillosos et al., 2009), as the public or private self-motives may outweigh the enhancement self-motive for consumers of these services. The nonsignificant weight of *self-image congruence* in the banking industry study may reflect the regulatory environment and consequently generic nature of most banking services, resulting in the diminished presence of any self-motive associated with bank brands (Krystallis & Chrysochou, 2014).

The finding concerning the high relative importance of *self-image congruence* in the university context of the current study is also supported in the higher education marketing literature. For example, higher education is characterised as being transformative in nature (Lowrie, 2007), both from the perspectives of intellectual development and furthering career opportunities that become available following degree attainment (Molesworth et al., 2009). The aspiration to possess the “best” qualification to support career ambitions is also evident in the competitive process of securing university places, with students striving to gain offers to the institutions and programs that rank most favourably, have the best reputations, and whose high-achieving alumni progress to successful careers (McManus, Haddock-Fraser, & Rands, 2017).

In the higher education brand equity literature the importance of *self-image congruence* finds support in Mourad et al. (2011) and Vukasovic (2015) whose studies show symbolic attributes such as brand personality and social image have a strong bearing on students’ choice of institution and on retention. Additionally, Dennis et al. (2016) find the dimensions of perceived quality and reputation are critical precursors to brand meaning or brand-student self-image congruence, which is the main antecedent of brand attachment strength that positively affects brand trust and commitment.

#### 5.2.1.5 Feelings

Following *self-image congruence*, the *feelings* attribute exerts the next most influence on perceived *brand evidence*. This result can be justified by referring to the theory concerning the role of emotions in consumer behaviour.

Most theorists classify emotions separately according to positive and negative affect, which are independent of each other (Edell & Burke, 1987; Laros & Steenkamp, 2005; Mano & Oliver, 1993; Phillips & Baumgartner, 2002). Expectancy-disconfirmation theory, which predominates

as an explanatory framework for consumer satisfaction, accounts for the significance of both positive and negative emotions (Mano & Oliver, 1993; Phillips & Baumgartner, 2002). Expectancy-disconfirmation theory suggests that consumers form expectations about the likely performance of a product or service, and compare actual performance perceptions with those prior expectations (Mano & Oliver, 1993; Phillips & Baumgartner, 2002). While confirmed expectations result in positive affect, disconfirmed expectations result in negative affect (Mano & Oliver, 1993; Phillips & Baumgartner, 2002; Westbrook & Oliver, 1991). Additionally, emotions evoked *during* the consumption of products influence satisfaction, with positive consumption emotions positively impacting satisfaction and negative consumption emotions having a negative impact (Mano & Oliver, 1993; Phillips & Baumgartner, 2002; Westbrook & Oliver, 1991).

Given the intangibility, inseparability, heterogeneity and perishability of services, including education (Zeithaml, 1981), and their consequent experience or credence dominance (de Chernatony & Dall'Omo Riley, 1999), perceived brand promise is even more critical to consumers' understanding and evaluation of service brands and products (Brodie, 2009). The alignment of expectation with service evaluation is essential in establishing trust, customer-perceived value and, ultimately, customer-brand loyalty (Brodie, 2009), and the successful execution of service brand strategy is contingent upon aligning external expression and internal execution to maximise the consistency between stakeholder perceptions and experiences (de Chernatony & Segal-Horn, 2003). Furthermore, positive affect towards service brands is not only dependent upon favourable evaluation during the service experience but can be differentiated by the emotional environment (Berry, 2000). Indeed, feelings may be a basis for service evaluation and affective responses "may explain incremental variance in service encounter evaluation compared to cold cognitions, since most service encounters are typically characterised by lack of information, uncertainty and high perceived risk" (Jayanti & Jayanti, 1995, p. 50).

Applying expectancy-disconfirmation theory to the higher education context, it can be argued that university brands are subject to ongoing evaluation during the consumption of service encounters that span years; furthermore, evaluations may change substantially over time given the highly variable nature of the higher education service (Hemsley-Brown & Oplatka, 2006). As students progress through their studies and encounter factors such as varying levels of responsiveness and support from faculty, differing quality and difficulty of unit materials and assessment activities, and better or worse results for units studied, these factors will be met with a range of emotional responses which aggregate as positive or negative affect towards the institution. Feelings experienced during tertiary study may additionally be heightened due to

strong links between higher education and emotional values, related social accountability issues, and the ability of education to impact and transform lives (Lowrie, 2007).

The relative importance of feelings in the current study additionally finds support in several higher education brand studies reviewed in Chapter 2. Pinar et al., (2014) find that emotional environment is the second most important attribute within the core university brand dimension. Consistent with expectancy-disconfirmation theory (Mano & Oliver, 1993; Phillips & Baumgartner, 2002), Bennett and Ali-Choudhury (2009) highlight the importance of links between brand promise and students' affective responses towards university brands.

A comparison of study results indicates that *feelings* is the most influential *brand evidence* attribute in the airline industry studies (Krystallis & Chrysochou, 2014; Pillossof et al., 2009), and is the second most important attribute in the banking study (Krystallis & Chrysochou, 2014). The greater relative importance of *feelings* in these industries may be explained by the nature of the services in which issues such as physical safety, reconnection with family, and financial security are at play, leading to a heightened affective response. Furthermore, because these services are complex, difficult to comprehend and substantially conducted out of view of the customer, feelings may become the basis for service evaluation (Jillapalli & Jillapalli, 2014). By comparison, in the study that incorporated retail (Grace & O'Cass, 2005), *feelings* were found to be of lower relative importance in a service where customers focus on the *price value* of the products on offer and the *core service* offering of that range of products.

#### 5.2.1.6 Core Service

The results show *core service* exerts the fourth greatest influence on *brand evidence*. Although in terms of service provision, *core service* and *employee service* are closely related, *employee service* pertains to the performance and behaviour of employees, whereas *core service* is the service provided (Grace & O'Cass, 2005), its processes and structural content (Johns, 1999). In the context of the current study, *core service* was defined for survey participants as: *the range of courses offered; academic standards; pedagogy, the method of teaching, the knowledge enhancement process; industry integration; and career prospects on graduation*.

The *core service*, or aspects thereof, are also found to be significant in the determination of university brands in several higher education studies reviewed in Chapter 2. Bennett and Ali-Choudhury (2009) find career prospects, program offerings and entry requirements to be important attributes of the university brand. For Goi et al. (2014), product/core service is a significant dimension of higher education provider visual brand identity. Aggarwal Sharma et al. (2013) find admission process rigor, pedagogy and industry integration are all significant drivers of the university brand. Vukasovic's (2015) study finds university brand equity most

significantly driven by determinants including perceived quality of the education service, range of courses, quality management and study method. Lastly, Khanna et al. (2014) find services such as orientation, counselling, and teaching and learning support significant drivers early in students' university experience (Khanna et al., 2014).

When compared with other services, the results show *core service* to be of lesser relative importance to the the university student sample group than participants in the retail, banking and airline studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Of the *brand evidence* indicators, *core service* was found to carry the greatest weight in the banking study (Krystallis & Chrysochou, 2014); it was second most important after *feelings* in the airline studies, being equivalent or near equivalent in weight to *price value* (Krystallis & Chrysochou, 2014; Pillossof et al., 2009); and came second after *price value* in the study that incorporated retail (Grace & O'Cass, 2005). Whilst, for the reasons already discussed, a greater emphasis is placed in higher education on *employee service*, or the way in which the service is provided, and *self-image congruence* underpinned by the ideal self-motive and the enhancement self-motive motives (Aguirre-Rodriguez et al., 2012), these brand attributes are less prominent within the contexts of the comparison studies. In the airline, banking and retail industries structural content, processes, activities and systems represented by the *core service* may rank more highly due to the less individualised, typically more generic nature of the services, and the relatively short, non-recurring consumer interactions with frontline staff (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009).

#### 5.2.1.7 Servicescape

In the current study, the three *brand evidence* indicators that come after *core service* in order of influence are *servicescape*, *price value* and *brand name*. Although none of these first order constructs was found to have a significant weight, each of the indicators returned sufficiently high loadings to make an absolute contribution to its construct (Cenfetelli & Bassellier, 2009; Hair et al., 2014).

Whilst *servicescape* was found to have a significant weight in other service industries, its relative influence on *brand evidence* was found only to be middling in the retail and banking studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014), and it exerted the second lowest significant weights in the airline studies (Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Whilst exerting a lower overall influence in these environments than other brand constructs, *servicescape* is nevertheless seen by the customers surveyed in these studies as a key component of the service experience.

Although *servicescape* was found nonsignificant in the current study results, its high loading indicates its absolute contribution to the *brand evidence* construct. Its retention in the model is also theoretically consistent with the findings of several of higher education brand equity studies that suggest the fitness-for-purpose and quality of university facilities and accommodation can make a difference to students' tertiary education experience, and can be designed to facilitate more effective study, create a more pleasant environment and encourage socialisation (Bitner, 1992). Aggarwal Sharma et al. (2013), Bennett and Ali-Choudhury (2009), Goi et al. (2014), Khanna et al. (2014) and Mourad et al. (2011) all integrate aspects of the institutional servicescape in their empirically tested models including hard and soft infrastructure, physical facilities, technological facilities and location.

However, some higher education brand research suggests that servicescape is a supporting, rather than core brand attribute. Pinar et al. (2014) classify physical facilities and student living as supporting value creation, as opposed to those services central to the university brand such as learning, teaching and research. Their classification of facilities is comparable to Ng and Forbes (2009), who find that although the servicescape can make a significant difference to students' university experience, it is one of several supplementary services required to "facilitate the core service experience" (p. 50). While the core educational service cannot function effectively in the absence of supplementary services, their efficient delivery alone does not result in a good university experience (Ng & Forbes, 2009); thus, a dynamic interaction process occurs between core and supplementary services in the creation of students' entire university experience, and supplementary services can increase the value of the core service. The servicescape, among other supporting or supplementary services, can therefore be thought of as a hygiene factor (Herzberg, 1966; Lovelock et al., 2011), causing dissatisfaction when basic needs are not met but not in itself resulting in student satisfaction. Viewing the current study's results for the *servicescape* indicator from the perspective of a supplementary service may provide an explanation for why it has absolute importance, but no significant relative importance to the formative *brand evidence* construct. Interpreted in this light, the results suggest the *servicescape* attribute is seen by the sample group as underpinning the educational experience, whilst not being pivotal to it.

#### 5.2.1.8 Price Value

The weights for *price value* and *brand name* follow *servicescape* in descending order, with an equivalent but nonsignificant result. However, the loading for *price value* places it over the threshold that suggests it makes an absolute contribution to the *brand evidence* construct, therefore supporting its retention in the model (Cenfetelli & Bassellier, 2009; Hair et al., 2014). The retention of *price value* is additionally supported from a theoretical perspective in several

higher education brand equity studies. Fees feature as an element of a university's functional practicability for Bennett and Ali-Choudhury (2009), and price value or perceived ROI feature as elements of the Mourad et al. (2011), Aggarwal Sharma et al. (2013), Goi et al. (2014) and Vukasovic (2015) models.

However, the nonsignificant weight of *price value* is at odds with the studies from which the theoretical model is drawn. In the banking and retail context, *price value* was found to be the greatest relative contributor to *brand evidence* (Grace & O'Cass, 2005); whereas in the airline (Krystallis & Chrysochou, 2014; Pillossof et al., 2009) and banking studies (Krystallis & Chrysochou, 2014), *price value* ranked either as second or third most important. As previously discussed, customers' greater focus on value for money in these industries above attributes such as *employee service* and *self-image congruence* may result from their more transactional nature, which is characterised by more limited interactions with service personnel and weaker self-enhancement motives when selecting a brand.

The nonsignificant weight, but absolute contribution of *price value* in the Australian higher education context may, as with *servicescape*, be seen as a hygiene factor (Herzberg, 1966; Lovelock et al., 2011), with concerns about the cost of the educational service being secondary to those relating to the quality of the experience of the core educational elements of learning, teaching and research (Ng & Forbes, 2009). This finding may be affected by university funding arrangements particular to the Australian context where eligible domestic students enrolled in Commonwealth supported places have their fees part-paid by the Australian government, and can defer the student contribution portion by taking a government HECS-HELP loan (Study Assist, n.d.). Because students do not need to repay the government HECS-HELP study loan until they are employed and earning over a defined threshold (Australian Taxation Office, 2017), it can be argued that price value is a lower priority when other elements of the service are meeting expectations. Furthermore, under the Commonwealth Grant Scheme, student contribution amounts for university fees are not determined by the institution as they are capped nationally according to discipline area (Department of Education and Training, 2017). Thus, from the perspective of Australian students who benefit from Commonwealth supported places, the playing field is levelled when comparing fees across public universities.

#### 5.2.1.9 Brand Name

CBBE theory suggests the role of a well established brand name is to trigger recall and, as a key element of brand evidence, connote quality and consistency (Aaker, 1996; Keller, 2001). Furthermore, for intangible services, brand name can convey meaning that becomes a surrogate for missing information and reduces consumer-perceived risk (Degeratu et al., 2000).

The model results for the current study show *brand name* has a nonsignificant weight and a loading that only marginally exceeds the threshold of 0.5 suggesting its absolute contribution to the *brand evidence* construct (Cenfetelli & Bassellier, 2009; Hair et al., 2014). The nonsignificance of brand name in the current study is consistent with the comparison studies (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009).

The nonsignificant weight for *brand name* could be explained by several factors in the higher education context. Firstly, the sample for the study includes current, rather than prospective students—just as the comparison studies sample current consumers. As participants in the study had actual experience with their respective university brands this may have lead them to focus on those brand attributes they had been able to assess during consumption of the service. Secondly, as the sample was drawn from all Australian public universities, taking in a cross-section of variously ranked institutions (Times Higher Education, 2017), it may capture a range of respondent motives for university selection. For example, some may be motivated by the *prestige* of a degree bearing the brand name of a leading, Group of Eight institution (Group of Eight, n.d.), where for others, the attainment of a degree is the goal in itself and they may seek institutions with lower barriers to entry, in a convenient location with lower living costs. While it is posited that university brand name may not play an equivalent role for all tertiary students, this hypothesis may be confirmed in a future study where SBL model results could be compared across variously ranked institutions. Thirdly, because Australian universities are mostly established under state and territory legislation, and are all regulated by the national Tertiary Education Quality and Standards Agency (Tertiary Education Quality Standards Agency, 2012), students have some level of assurance regarding standards and may therefore be less focused on *brand name* as an indicator of quality as a surrogate for missing information.

*Brand name* does not have a significant weight but does have a loading that suggests it makes an absolute contribution to the brand evidence construct (Cenfetelli & Bassellier, 2009; Hair et al., 2014). Like *servicescape*, it could therefore be considered a hygiene factor (Herzberg, 1966; Lovelock et al., 2011). This interpretation would suggest that whilst *brand name* is secondary in importance to the core elements of the educational experience and not an explicit focus for students, continuing positive reputational associations are necessary in order to maintain favourable perceptions of the brand name (Ng & Forbes, 2009).

### 5.2.2 The Inner, Structural Model

In this section, the discussion turns to the inner model PLS-SEM results. The results are considered in relation to research questions two and three, compared to the hypothesised relationships between the model's five key constructs, and interpreted by reference to the theory and comparison studies set in other service contexts (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). This section focuses on the second part of *RQ2* that seeks to identify the relative influence of the higher education institution brand *dimensions* in the SBL model, while *RQ3* seeks to understand whether the *process* through which higher education service consumers develop brand loyalty might be the same as for other services.

Table 20 is a replication of Table 18 and provides a summary of hypotheses and whether they were supported in the results.

**Table 20. Summary of Hypothesis Results**

Hypothesis	Supported / Not Supported
H1: Brand Evidence → Satisfaction*	Supported
H2: Brand Evidence → Brand Attitude*	Supported
H3: Brand Hearsay → Satisfaction	Not supported
H4: Brand Hearsay → Brand Attitude	Not supported
H5: Brand Hearsay → Brand Evidence*	Supported
H6: Satisfaction → Brand Attitude*	Supported
H7: Brand Attitude → Brand Loyalty*	Supported

\*Indicates significance at  $p < 0.05$  and  $t\text{-value} > 1.96$

The hypothesised relationships supported by the path results include H1, H2, H5, H6 and H7. Their path coefficients range in relationship strength between a classification of strong and substantial (Chin, 1998b). However, the null hypotheses for H3 and H4 cannot be rejected, as neither path is significant. In summary, the following hypotheses can be accepted.

- H1<sub>1</sub>: *Brand evidence* has a positive impact on *satisfaction* .
- H2<sub>1</sub>: *Brand evidence* has a positive impact on *brand attitude* .
- H5<sub>1</sub>: *Brand hearsay* has a positive impact on *brand evidence* .
- H6<sub>1</sub>: *Satisfaction* has a positive impact on *brand attitude* .
- H7<sub>1</sub>: *Brand attitude* has a positive impact on *brand loyalty* .

The results show a strong path relationship between *brand hearsay* and *brand evidence*, indicating that advertising, publicity and word-of-mouth have a significant bearing on the way students perceive university *brand evidence*. The relationship between *brand hearsay* and *brand evidence* is similarly found to be significant by Grace and O'Cass (2005), Pillossof et al. (2009) and Krystallis and Chrysochou (2014). Although the  $R^2$  result for *brand evidence* infers the majority of its variance is explained by *brand hearsay*, this should be viewed with caution,



because the variance in a formative construct (i.e. *brand evidence*) is supposed to be accounted for entirely by its indicators (Diamantopoulos et al., 2008). Nevertheless, as *brand hearsay* is an exogenous variable and precedes *brand evidence* in the model, this path coefficient suggests initial exposure to a university's controlled and uncontrolled brand communications influences the way the sample perceives *brand evidence* attributes such as *employee service*, *core service*, and the *servicescape* when they subsequently experience the education service. Furthermore, as expectancy-disconfirmation theory suggests, controlled and uncontrolled university brand communications (*brand hearsay*) result in the formation of expectations about the likely performance of the education service (Mano & Oliver, 1993), which, when compared by students to their actual experience, results either in positive or negative affect, and an evaluation and disposition that will, in turn, influence satisfaction (Mano & Oliver, 1993; Phillips & Baumgartner, 2002; Westbrook & Oliver, 1991). This finding is consistent with the earlier higher education services brand research of De Chernatony and Segal-Horn (2003), which suggests it is not only vital for universities to leverage communications to enhance student perceptions of their brands, but to strive for congruence between student expectation and evaluation by aligning external brand expression with internal brand execution.

Despite the strong paths between *brand hearsay* and *brand evidence*, the path coefficients leading from *brand hearsay* to *satisfaction*, and from *brand hearsay* to *brand attitude* are nonsignificant. However, the coefficient for the path between *brand evidence* and *satisfaction* can be considered to be strong (Chin, 1998b), and the  $R^2$  result for *satisfaction* shows that *brand evidence* explains the majority of its variance. These results infer that *satisfaction* is an immediate response to the evaluation of experienced brand evidence. Furthermore, as the results show *controlled communications* and *uncontrolled communications* not to have any direct, significant impact on current students' satisfaction with or attitude to their university brands, this suggests that if *brand hearsay* has any effect on *satisfaction* it is mediated by *brand evidence*, and students first need to experience the higher education brand to inform their brand evaluation and, in turn, their disposition towards the brand.

The strong, positive effect of *brand evidence* on *satisfaction* is consistent with the structural model results obtained in the comparison studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Although the Grace and O'Cass (2005) study of retail and banking industries found the path relationships between *brand hearsay* and *satisfaction* and *brand hearsay* and *brand attitude* to be significant (albeit that they were the weakest in the model), the nonsignificant results for these paths in the current study are at least partially consistent with the airline and banking industry studies in which the path between *brand hearsay* and *satisfaction* was also nonsignificant, and what would be considered only a weak

path relationship (Chin, 1998a) existed between *brand hearsay* and *brand attitude* (Krystallis & Chrysochou, 2014; Pillossof et al., 2009). When comparing the current results with the reference studies it is clear that *brand evidence* plays an important role in influencing *satisfaction* in higher education, the airline and banking industries (Krystallis & Chrysochou, 2014; Pillossof et al., 2009), while *brand hearsay* also has a significant effect on *satisfaction* and a stronger effect on *brand attitude* in the retail context (Grace & O’Cass, 2005). This variance may be accounted for by the greater experience and credence dominance of services (Darbi & Karni, 1973; Girard & Dion, 2010; Nelson, 1970, 1974) such as higher education, airlines and banking compared with retail, and the greater extent to which customers require exposure to brand evidence by engagement in the service process to evaluate the service brand.

The nonsignificant path results between *brand hearsay* and *satisfaction* and *brand hearsay* and *brand attitude*, and the strong relationship between *brand evidence* and *satisfaction* can further be explained by the services and branding theory. Service brand theory suggests that the intangibility of services result in consumers’ brand image perceptions being predominantly shaped by their brand experience (Berry, 2000). This is because core service and employee service attributes can only be evaluated during service consumption, while service quality is determined either during or following the consumption experience (Zeithaml et al., 1985). Furthermore, due to the experiential nature of services, pleasant feelings and perceived self-image congruence become critical dimensions for service brands (Berry, 2000). The predominance of feelings experienced during consumption as a factor in overall service brand evaluation may be even more pronounced in settings such as higher education where the service product is both complex and subject to a high degree of heterogeneity and insperability (Jayanti & Jayanti, 1995). Given the immersive, sustained, complex nature of university study (Hemsley-Brown & Oplatka, 2006), brand meaning transfers over time with the student gradually constructing a richer brand understanding through experience than can be transferred through brand communications alone (Dennis et al., 2016). In the context of the current study, *satisfaction*, which is understood as consumers’ post-purchase evaluation of service performance compared to prior expectations (Phillips & Baumgartner, 2002; Westbrook & Oliver, 1991), is entirely reliant on students having experienced the various *brand evidence* attributes.

The path between *brand evidence* and *brand attitude* has an effect that is between moderate and strong (Chin, 1998b). In the higher education context of the current study, this indicates that *brand evidence* attributes are not only compared by students to pre-purchase expectations (resulting in *satisfaction*), they have a direct influence in shaping students’ overall positive or negative disposition, or attitude towards the brand. However, the results also show that *brand attitude* is almost as strongly affected by *satisfaction* as it is by *brand evidence*, suggesting that

*brand attitude* is a product of both *brand evidence* and *satisfaction* on an almost equivalent basis. Although the comparison study results similarly show medium path effects between *brand evidence* and *brand attitude*, and between *brand evidence* and *satisfaction* (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), it is noted in the higher education and airline contexts that the path coefficients between *brand evidence* and *brand attitude* are stronger than between *satisfaction* and *brand attitude* (Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Although *brand attitude* is intended to represent a “global assessment of all brand stimuli” (Grace & O’Cass, 2005, p. 127), the stronger effect of *brand evidence* on *brand attitude* in the higher education and airline studies may be accounted for by the predominance in these contexts of the *brand evidence* attributes that are shown to have a direct effect on customer *brand attitude*. For example, the theory suggests that self-image congruence and price value directly affect brand attitude (Burton et al., 1998; Sirgy et al., 1997; Zinkhan & Martin Jr., 1987). As discussed, *self-image congruence* has been found in the current higher education context to exert a high level of influence on *brand evidence*, while both *self-image congruence* and *price value* exert a relatively strong influence on *brand evidence* in the two airline service studies (Krystallis & Chrysochou, 2014; Pillossof et al., 2009).

Finally, the results show a strong path relationship between *brand attitude* and *brand loyalty*. This suggests that in the current study’s context, *brand loyalty*, which consists both of behavioural and attitudinal dimensions (Dick & Basu, 1994), is the ultimate student response to the university brand and is a reflection of student-based brand equity. The strong empirical link between *brand attitude* and *brand loyalty* is supported in the literature (Baldinger & Robinson, 1996; Chaudhuri, 1999; Taylor & Hunter, 2003) and can be explained by the theory of reasoned action (Azjen & Fishbein, 1977), which suggests attitudes precede loyalty behaviours. *Brand loyalty* is the deeply held dispositional commitment that reduces brand switching behaviours, supports the retention of students by the institution and, in turn, results in the superior performance of the university brand (Yoo & Donthu, 2001). This reflects the sample’s ultimate disposition towards the brand that signals a longer-term commitment, as is required of university students given the sustained nature of higher education.

A strong path is evident between *brand attitude* and *brand loyalty* in the two airline studies that utilise the SBL model (Krystallis & Chrysochou, 2014; Pillossof et al., 2009), with the banking industry study returning an even stronger coefficient and showing the closest similarity to the current study results (Krystallis & Chrysochou, 2014). The stronger paths evident in the banking (Krystallis & Chrysochou, 2014) and higher education studies may once more be explained by the nature of these services where results are expected to emerge over a sustained period, meaning customers may be more likely to persevere with a given brand. This echoes the

finding of Sultan and Wong (2014) that university student satisfaction, trust and consequent behavioural intentions form over time. Furthermore, banking clients and university students may be more inclined to remain with their selected brand for an extended duration because brand switching is more difficult than in other service industries such as airlines or retail stores. The effort and complexity involved in setting up a new bank account, or applying to a different university and transferring academic credit to a different program may act as disincentives to switch institutions. Furthermore, students may also be motivated to remain with their university because of the sense of community and relationships they form with their cohort and faculty (Sung & Yang, 2008). This, together with factors such as the time and effort already committed by students into their chosen course of study, may result in their feeling personally invested in the institution, and enhance loyalty to the university brand.

*RQ3* queries whether the *process* through which higher education service consumers develop brand loyalty might be the same as for other services. The above discussion compares the inner model results of the current study with those of the reference studies (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Whilst the results are not identical, the comparison shows distinct similarities in the process by which brand equity (expressed either as *brand verdict* or *brand loyalty*) is created, and infer that the SBL process model can be flexibly adapted and applied in a variety of service industry contexts. By comparing the results with the theory, the preceding discussion posits that the variances across study results may be explained by industry context. It is suggested that the more experience and credence dominant the service (Darbi & Karni, 1973; Girard & Dion, 2010; Nelson, 1970, 1974), the greater the extent to which the *brand evidence* dimension is central to informing the service customer’s ultimate brand evaluation. This is particularly evident in the context of the current higher education study, as well as in the studies that examine the airline and banking industries (Krystallis & Chrysochou, 2014; Pillossof et al., 2009).

### **5.2.3 Conclusions About the Research Problem**

Whereas the preceding section specifically addressed the research questions and each proposition represented in the hypothesised model, broad conclusions will next be drawn about the research problem. The overarching research problem this study set out to address is:

*What are the attributes and dimensions that influence student perceptions of Australian university brands, and what is the process of customer-based brand equity creation in this higher education context? How does this compare with other service industries?*

The adapted SBL model is found to have relevance in the Australian public university setting of the current, exploratory study. However, when compared with studies using the model in other

service industry contexts (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), the results show variances that may be explained by industry context and reference to the services marketing and branding literature.

In relation to the brand building *attributes* that are meaningful to Australian university students, the first order formative constructs for *brand evidence* and *brand hearsay* were considered. For *brand hearsay*, it was found that both *controlled communications* and *uncontrolled communications* returned significant weights. The results also show *employee service*, *self-image congruence*, *feelings* and *core service* exert a significant relative influence on the *brand evidence* construct and are central to the experienced university brand. While *servicescape*, *price value* and *brand name* have nonsignificant weights, their loadings are sufficiently high to be considered to make an absolute contribution to *brand evidence* (Cenfetelli & Bassellier, 2009; Hair et al., 2014). As such they may be considered supplementary attributes (Ng & Forbes, 2009) and remain relevant in the model.

By delivering insight into the *process* underpinning brand equity for Australian universities, the results also provide an understanding of the relative influence of the SBL model brand *dimensions*. The structural model path coefficients show significant path relationships for all but H3 and H4. As anticipated, the ultimate *brand loyalty* response has a clear, strong relationship to the *brand attitude* construct that precedes it. However, the results show that *satisfaction* is based solely on students’ evaluation of *brand evidence* and while brand communications have no significant direct effect on *satisfaction*, *brand hearsay* initially influences perceptions of *brand evidence* by way of setting expectations that are then evaluated in view of the experienced university brand. Whilst *brand evidence* and *satisfaction* exert a similar influence on *brand attitude*, *brand hearsay* was perceived to have no significant effect on *brand attitude*. It can therefore be concluded that experienced *brand evidence* has the strongest overall influence on attitudinal disposition towards the university brand.

Comparing the current results for the formative *brand hearsay* and *brand evidence* attributes with those obtained in other service contexts reveals variances in their relative weightings across service settings (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). It is posited that these differences can be accounted for by the characteristics of the service under study—a claim is supported in Section 5.2.1 by reference to the literature. Turning first to *brand hearsay*, the higher weight of *controlled communications* is consistent with the results obtained in all three comparison studies (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Conversely, the *uncontrolled communications* attribute is found to contribute significantly to *brand hearsay* in the higher education context, but was nonsignificant in the airline, banking and retail studies (Grace & O’Cass, 2005;

Krystallis & Chrysochou, 2014; Pillossof et al., 2009). This variance can be justified by reference to the higher education marketing literature that points to the highly intangible nature of higher education, the relative complexity of the university selection process, the consequent influence of league table publicity (Gibbons et al., 2015; Ivy, 2008), and the strength of the advisory role played by family and friends (Dao & Thorpe, 2015; Johnston, 2010; Joseph et al., 2012).

In relation to the *brand evidence* attributes, *employee service*, *self-image congruence*, *feelings*, and *core service* were all found to exert significant individual influences on *brand evidence*, which is consistent with the comparison service industry studies (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). However, their magnitude of influence varies across studies. For example, the current study results show *employee service* exerts the greatest influence on Australian university students’ perceptions of *brand evidence*, which may be accounted for by the sustained and intensive nature of faculty–student contact throughout degree programs (Chapleo, 2015; Hemsley-Brown & Oplatka, 2006) and the importance of instructional effectiveness on student satisfaction (Eagle & Brennan, 2007; Elliott & Healy, 2001). Likewise, the strength of *self-image congruence*, which is the second most influential *brand evidence* attribute in the current study, may be explained by the combined presence of private self-motive socialness and enhancement self-motives in the university context (Aguirre-Rodriguez et al., 2012). While *brand name* was also found to have a nonsignificant weight in all studies (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), *servicescape* and *price value* were also found in current study to make no individual contribution to explaining *brand evidence*. Nevertheless, *brand name*, *servicescape* and *price value* all returned loadings in the current study that suggest they are of absolute importance to the latent *brand evidence* construct (Cenfetelli & Bassellier, 2009; Hair et al., 2014). Reference to the marketing and higher education literature suggests these results may mean that university students view *servicescape*, *price value* and *brand name* as hygiene factors (Herzberg, 1966; Lovelock et al., 2011) that are secondary to concerns relating to the quality of the experience of the core educational elements of learning, teaching and research (Ng & Forbes, 2009).

Variances are also apparent when comparing the relative influence of the inner model *dimensions* evident in the current study results with those from other service industry studies using the SVB or SBL models (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Results across all four studies consistently show the strongest drivers of consumers’ ultimate behavioural disposition towards the service brand are the relationships between *brand hearsay* and *brand evidence*, *brand evidence* and *satisfaction*, *brand evidence* and *brand attitude*, and *brand attitude* and *brand loyalty* (Grace & O’Cass, 2005; Krystallis &



Chrysochou, 2014; Pillosof et al., 2009). Consistent with the results of the current higher education study, *brand hearsay* is found to have no significant impact on *satisfaction* in the banking or airline industries (Krystallis & Chrysochou, 2014; Pillosof et al., 2009). This is likely due to the experience and credence dominance of these industries, which results in an absolute reliance by consumers on *brand evidence* to draw conclusions about the service. By comparison, advertising is shown to have a direct effect on post-purchase evaluation for the retail sector (Grace & O'Cass, 2005), possibly through effects such as cognitive dissonance reduction (Kassarjian, 1965). Although *brand hearsay* was found to exert a weak direct influence on *brand attitude* in the retail study (Grace & O'Cass, 2005, p. 174), a weaker influence in airlines (Krystallis & Chrysochou, 2014), and the weakest in banking (Krystallis & Chrysochou, 2014), the current study results showed no significant relationship exists between these dimensions in the higher education setting. A comparison of this path relationship across studies suggests an inverse relationship between the path strength linking *brand hearsay* and *brand attitude* and the extent to which service outcomes are subject to sustained contact with the institution and its employees. Of the industries under comparison, it is in higher education services that encounters with faculty are likely to be the most intensive and repeated over a sustained period, and in which the formation of *brand attitude* is dependent on experienced *brand evidence* and consequent *satisfaction*, with *brand hearsay* having no significant direct effect.

The results of the current exploratory study and their comparison in the above discussion to other service studies, suggest that the *process* by which CBBE is created for higher education brands is similar to that found in other service industries. Once variances across SBL study results are justified by reference to higher education and service brand literature, a tentative picture emerges that suggests differences can be accounted for by industry context and factors such as the experience and credence dominance of the service under examination. As discussed in the preceding sections of this chapter, the process of higher education brand loyalty creation appears similar to that of other service industries in which the customer is unable to evaluate outcomes and draw conclusions regarding service efficacy until they have experienced a sustained period of contact with the service process and provider (Girard & Dion, 2010). Furthermore, the contrasting results obtained from the several studies under review suggest that the SBL model provides sufficient scope and flexibility to allow its application in a variety of service industry contexts.

### 5.3 Theoretical Implications

Chapter 2 presented a review of eight studies in the emerging field of customer-based brand frameworks within the higher education sector (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Dennis et al., 2016; Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015). A comparison of these sector-specific models generally reveals a deficit of consensus on the process and drivers underlying higher education brand equity creation. This dearth of agreement is the result of the studies' divergent theoretical origins, measurement approaches, and varying levels of brand experience across the sample groups. No higher education brand model examined in the literature review provides a framework that includes a comprehensive inventory of higher education brand attributes and dimensions and shows their relative influence on the brand equity creation process.

The current study contributes to the specific body of higher education brand literature by beginning to address the identified literature gaps and enhancing understanding of CBBE creation in Australian universities. The results of the exploratory study suggest that a model drawn from the service branding literature provides a solution to the identified issues, as it comprehensively integrates measures of the relative importance of brand attributes and dimensions, while considering the process by which brand equity is created (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). Not only is the selection of a service brand model for the higher education context theoretically justified because universities are broadly considered constituents of the services sector (Ng & Forbes, 2009; Nguyen & Rosetti, 2013; Sautter et al., 2007), but the selection of an empirically tested service brand model has provided the dual benefits of contributing to the body of branding literature specific to the higher education industry and to the services branding literature, by extending the model's application to a new services context.

The results indicate that the adapted SBL model (Krystallis & Chrysochou, 2014; Pillossof et al., 2009) is applicable in a higher education context once industry-specific characteristics are accounted for. Because the research questions sought to identify whether the drivers and process of CBBE creation are the same in higher education as other services, the study results were compared with those obtained in other services in which the model and its variants have been utilised (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). This process has not only provided further support for the model by revealing similarities in the brand equity creation process across service industries, but it has yielded insights into sector-related variances in the relative influence of the model's attributes and dimensions. Recognising that the drivers of CBBE reflect key variables of the brand sector and category (Christodoulides



& De Chernatony, 2010), it is posited that the sector-related variances can be accounted for by the context and nature of the service to which the model is applied.

These variances are interpreted and supported by referring to the higher education and service brand literature. This approach contributes to the theory by providing an enhanced understanding of how the characteristics of a service can lead customers to focus on certain brand attributes over others. For example, when comparing results for the *attributes* linked to the outer model's *brand hearsay* construct, the findings suggest that students perceive both *controlled* and *uncontrolled communications* as important in the relatively complex process of selecting a university and course; whereas *controlled communications* alone are found to play a role in the retail, banking and airline studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009) where the service may contain more tangible cues, or is easier to understand. Furthermore, a comparison of the relative contributions made to *brand evidence* by its first order formative constructs reveals that whereas customer-perceived *feelings*, *core service* and *price value* are the most important attributes in airlines, banking and retail respectively (Krystallis & Chrysochou, 2014; Pillossof et al., 2009), *employee service* carries the greatest weight in the university context where faculty–student contact is sustained throughout degree programs (Chapleo, 2015; Hemsley-Brown & Oplatka, 2006) and the importance of instructional effectiveness on student satisfaction is well documented (Eagle & Brennan, 2007; Elliott & Healy, 2001). While *servicescape*, *price value* and *brand name* were not identified by the student sample as making significant individual contributions to *brand evidence*, their absolute importance to higher education *brand evidence* is indicated by their loadings, suggesting they are hygiene factors (Herzberg, 1966) or attributes that support the core educational elements of learning, teaching and research, and their related outcomes (Ng & Forbes, 2009). The findings relating to the varying influence of *brand hearsay* and *brand evidence* attributes across service industries also contribute to the literature by indicating the SBL model's adaptability for use in a variety of service contexts.

Additional contributions are made to the higher education brand and service brand bodies of knowledge through the comparison of study results for the inner model relationships (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), as this approach builds on the understanding of the CBBE creation *process*. The findings suggest the primacy of *brand evidence* over *brand hearsay* in affecting *satisfaction* and *brand attitude* in high experience, high credence services such as higher education and banking (Krystallis & Chrysochou, 2014), where the brand relationship is formed over a sustained period. By contrast, in industries such as the airlines (Krystallis & Chrysochou, 2014; Pillossof et al., 2009) and, to a greater extent, retail (Grace & O'Cass, 2005) where service encounters are more sporadic, *brand hearsay* may have a greater direct influence on *satisfaction* and *brand attitude*. Once these variances are

taken into consideration, the inner model can be characterised as fitting the Australian university context.

## 5.4 Methodological Implications

The current study results infer not only theoretical but methodological contributions to the literature. When adapting an existing model, greater fidelity to the original study can be achieved not only by maintaining the integrity of the initial model's core elements and structure, but by replicating the statistical methods used in the reference study (Tabak et al., 2012). Adapting the current study measurement scales and model from existing service brand studies, replicating the data collection and the analytical PLS-SEM analytical methods used, and contrasting the results with those of the reference studies, has also allowed the overall methodological approach drawn from the reference studies to be evaluated in a different service brand context (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009).

From a methodological perspective, this study contributes to the service brand literature by adding support for the measurement scales used in association with the SBV and SBL models, as drawn from the reference studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). The scales, largely adapted from Grace and O'Cass (2005) with only the *brand loyalty* scale being derived from Pillossof et al. (2009) and Krystallis and Chrysochou (2014), only required minimal changes to wording to suit the university setting. The findings in both the pilot and main studies that the adapted scales possess reliability, convergent validity and discriminant validity, additionally indicate the scales' suitability for use in universities; thus contributing a new set of brand equity measurement scales for the higher education context.

The adoption of the reference studies' model structure, together with replicating the PLS-SEM analytical method they used, has also yielded methodological insights (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). The comparability of results across this and the exploratory reference studies suggests that multi-level hierarchical component modelling, combined with the PLS-SEM method, presents an appropriate solution, not only in the higher education context but across service industries where researchers seek to understand the *process* of brand equity creation and simultaneously to measure the relative influence of its attributes and dimensions. Furthermore, as university brands can be characterised as relatively involuted (Baker et al., 2005; Christodoulides & De Chernatony, 2010), the results also add weight to the claims of the PLS-SEM scholars that the method is well suited to the analysis of complex hierarchical component models and can simplify structural paths in models where several related concepts are combined (Hair et al., 2014; Hair et al., 2012).

## 5.5 Managerial Implications

In the past three decades, higher education institutions in Western liberal democracies have faced mounting competitive pressures due to factors such as declining government funding, increasing international competition for students, and the entry of non-traditional private and online providers (Binsardi & Ekwulugo, 2003; Chapleo, 2015; Ivy, 2001; Mazzarol & Soutar, 1999). Furthermore, attitudes regarding the utility of education have changed, with degrees increasingly seen as commodities, universities as service providers, and students as “customers” who pursue tertiary qualifications for career outcomes as opposed to knowledge being an end in itself (Molesworth et al., 2009). To combat these market pressures and achieve the objectives of creating differentiation and enhancing brand preference, higher education institutions have drawn increasingly on branding approaches from the corporate services sector, with many universities either establishing internal professional service units to manage their brands or outsourcing to specialist brand management firms (Binsardi & Ekwulugo, 2003; Chapleo, 2015; Ivy, 2001; Mazzarol & Soutar, 2001).

As this exploratory study was conducted in an Australian public university setting, the findings may prove useful to brand managers operating in a similar context. The results indicate that the scales, when adapted for higher education, possess reliability, convergent validity and discriminant validity, and that the adapted SBL model attributes and dimensions and the *brand loyalty* creation process are similar in this setting to those achieved in other service contexts (Krystallis & Chrysochou, 2014; Pillossof et al., 2009). These findings could be useful to university brand managers in several respects. Firstly, the results imply that the adapted scales could be used by university management wishing to collect data for internal studies in which the strengths of their own university brands are measured. Secondly, the findings indicate that higher education CBBE creation can be visually represented as a theoretically-supported process model, simplifying the concept of brand equity creation, and making it relatively easy for brand managers to communicate branding concepts to their institutions’ executives. Thirdly, by indicating relative weightings for university brand attributes, the results provide guidance to brand managers about those aspects of higher education brands that are of greatest perceived importance to students, and therefore should become areas of focus for further brand development.

Universities seeking to optimise their brands might consider investing in those attributes that are most important to students. For example, the results suggest that *employee service*, or the performance and behaviours of employees, is most important to students when they evaluate a university brand, and is a key determinant of future service consumption. Universities wishing to enhance students’ brand perceptions may therefore choose to prioritise investment in and

development of high calibre staff, from the perspectives of intellectual capital and academic reputation (Aggarwal Sharma et al., 2013; Khanna et al., 2014), the provision of quality teaching and learning, and an enhanced student service experience at their institutions (Goi et al., 2014).

Furthermore, the results indicate that students consider the second most important *brand evidence* attribute to be *self-image congruence*. As social identity theory suggests that individuals seek affiliation with organisations that allow them to distinguish themselves from others and to enhance their self-image, universities may reflect on how they might enhance students' brand affiliation by crafting and projecting a brand personality that will be perceived as favourable, distinctive, and congruent with the personalities of their identified target markets (Aguirre-Rodriguez et al., 2012; Balaji, Roy, & Sadeque, 2016; Mourad et al., 2011; Sirgy, 1982; Vukasovic, 2015), whilst also achieving the objectives of being inclusive and representative of the student community (Bennett & Ali-Choudhury, 2009). Additionally, universities may seek to reinforce *self-image congruence* for current students by implementing initiatives designed to connect groups with similar interests and heighten their sense of institutional belonging (Balaji et al., 2016).

As the results point to *feelings* being the third most important university brand attribute for students, universities should be mindful that positive or negative feelings arise from the totality of students' experience with the brand (Mano & Oliver, 1993). Given the key role of positive affect in consumer satisfaction, (Mano & Oliver, 1993; Phillips & Baumgartner, 2002), and its consequent effect on brand attitude and loyalty (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), universities should consider strategies that enhance positive student feelings towards their brands. As expectancy-disconfirmation theory suggests, students compare perceptions of their actual university experience with prior expectations, and only where those expectations are confirmed will positive affect result (Mano & Oliver, 1993; Phillips & Baumgartner, 2002; Westbrook & Oliver, 1991). To achieve the consistency between stakeholder expectations and experiences that is required for service brand strategy to succeed, it is critical that universities recognise the equally important roles of advertising and the optimisation of the customer experience in the development of CBBE (de Chernatony & Segal-Horn, 2003), and that the brand promise communicated through advertising should be aligned with the elements of the educational service delivery (Brodie, 2009).

Beyond the results of the current study, the findings suggest that the scales and model could be used as a diagnostic tool by higher education brand managers to understand the relative strengths and weaknesses of the *attributes* of their own university brands, and to measure brand performance via these attributes' positive effect on satisfaction, brand attitude and, ultimately,

brand loyalty. Whilst an initial understanding of student perceptions of the university brand could be gained via a cross-sectional study, the scales and model could additionally be used in a longitudinal study to monitor and track the results of an institution's brand management strategy over time. Furthermore, potential exists for the brand strengths and weaknesses of an individual institution to be benchmarked against a sector-wide study that uses the same scales and model. Benchmarked findings could allow higher education brand managers to identify those attributes that fall short of sector norms and detrimentally affect their institution's brand equity, and this empirical evidence could provide the basis for an evidence-based strategy to develop an institution's brand.

The findings also infer implications for brand managers in the broader services sector. Although the comparison of model results was limited to only three other service industry studies (Grace & O'Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), it begins to reveal that factors such as the complexity of the service product, the duration of the service, and extent to which the customer experiences repeat encounters with service personnel may affect the relative importance of brand attributes for a given industry. An awareness of how these service characteristics may affect consumers' responses to brands could assist service branding professionals to identify which attributes should be emphasised when developing brand strategy for a certain industry context.

## **5.6 Limitations and Implications for Further Research**

Further to the delimitations outlined in Chapter 1, several limitations emerged during this study. Although it is important to acknowledge these limitations, as discussed below they do not detract from the significance of the findings. Indeed, they present opportunities for further research.

Continued research into the processes, dimensions and attributes of CBBE for service industries, including higher education, is important both from a theoretical and managerial perspective. It will not only provide brand and marketing scholars with a greater understanding of how service brand equity may differ across industry and cultural contexts, it will also provide brand managers with frameworks and measurement tools that allow them to research and obtain the empirical brand performance data critical for developing evidence-based brand strategies. This section proceeds to identify both the limitations, and the opportunities for future research arising from the current study.

Firstly, although the data was collected using a non-probability, purposive quota sampling technique with the intention that the sample would approximately represent the Australian higher education student population in terms of gender, level of study and discipline area (Department of Education and Training, 2015), and the data was collected from all Australian universities, the quotas did not factor in ratios of student numbers by university. This may have resulted in some institutions being over or under-represented. Furthermore, it is acknowledged that most respondents were from large city universities, and their perspectives on university brands may differ from those of students in regional universities. However, given that this study is exploratory in nature, having the objective of developing tentative theories based on a well grounded picture emerging from the findings (Cuthill, 2002), the results are not intended to be generalizable to the Australian university student population at large (Bryman & Bell, 2011). The level of representativeness that more complex quota sampling would have allowed was therefore not a goal of the current research. Nevertheless, quotas that are reflective of relative university populations in addition to national higher education ratios for gender, discipline area and stage of study, may be a consideration for a future study. This would allow the results to more accurately reflect the composition of the Australian university student population, and mitigate potential response bias resulting from the over representation of the larger city universities.

Secondly, as is appropriate for exploratory research where the PLS-SEM method is utilised, a relatively small sample (n=163) was drawn for the study (Cohen, 1992; Green, 1991). However, it is likely that this smaller sample size played a role in a limitation that became apparent in relation to the results obtained for the *feelings* indicators. As discussed in Section 5.2.1, the greater standard errors obtained for the negative *feelings* variables, demonstrates a more highly varied response on the related survey items, in turn affecting the reliability of the negative *feelings* items (Rumsey, 2016). As a result the negative *feelings* item loadings fell short of the threshold of 0.7 required for convergent validity (Garson, 2016; Hair et al., 2014). The results obtained for the negative *feelings* indicators would probably have stabilised had a much larger sample been taken (Rumsey, 2016). Although these results were not ultimately problematic for the *feelings* measurement model because a total of five indicators could still be retained—exceeding the recommended minimum of items per reflective construct to achieve reliability and validity (Hair et al., 2014; Wold, 1982)—it is recommended that future research using the SBL model could be undertaken on a much larger scale across the Australian higher education context. Doing so has the potential not only to stabilise the results obtained for the negative *feelings* indicators, thus eliminating the reliability issues encountered for these indicators in the exploratory study (Rumsey, 2016), but could allow the results to be generalisable.

Furthermore, undertaking a national study at scale could provide the benefit of producing results that establish public higher education sector benchmarks for the relative strengths of university brand attributes and dimensions. Individual institutions using the SBL scales and model (Krystallis & Chrysochou, 2014; Pillossof et al., 2009) to undertake research internally could then measure and compare their own brand performance against these national benchmarks. Other than cross-sectional research, a series of studies could also be undertaken to produce longitudinal data to determine whether university brand perceptions on a national or individual institution basis are shifting over time. Beyond a need to establish the generalisability of the SBL scales and model (Krystallis & Chrysochou, 2014; Pillossof et al., 2009) for Australian public universities, there are opportunities for additional research to be undertaken in other higher education sectors, segments and cultures. For example, the study could be replicated for Australian private higher education providers, and the results compared to a study of public universities. This would provide insights into what, if any, differing emphases are placed on higher education brand attributes by students choosing private institutes over public universities. Also within the Australian context, a future study could compare the higher education brand perceptions of domestic and overseas students, which might inform those aspects of the brand that should be foregrounded to attract students locally or internationally. At a more granular level, the model could be used to identify and compare student perceptions of faculty “brands” within a particular institution.

Although the sample group for this study included only current university students, a future study using the same scales and theoretical model might incorporate university graduates. A comparison of student and graduate responses may reveal the extent to which perceptions of the university brand change once a student leaves the institution and utilises their qualification, knowledge and skills in a career context.

Other future studies might be conducted in differing countries, and results compared to understand whether the relative importance placed by students on higher education brand attributes shift across cultures. This, in turn, may inform brand development strategies for universities seeking to attract students from specific countries or regions.

Further to opportunities for research within the higher education context, there would be benefits associated with the use of the model in future cross-industry studies within the service sector. The reference studies on which the adapted SBL measurement scales and model are based (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009), are exploratory in nature, and limited to three industries. Future large scale studies using the scales and model in these and other service industries may not only establish the generalisability of the results for those industries, they could also allow for further cross-industry comparison. The

generalisable results of these studies could allow for further development of service brand theory by providing more definitive conclusions about whether the process of brand equity creation is the same across industries, and an understanding of the relative importance of brand attributes and dimensions across services.

Lastly, it is acknowledged that the findings reported in this study are confined to the range of attributes contained within the SBV and SBL models on which the current study is based (Grace & O’Cass, 2005; Krystallis & Chrysochou, 2014; Pillossof et al., 2009). While Table 3 (Chapter 2) demonstrates that the brand attributes appearing in the reviewed higher education brand models map well to the attributes offered within the SBL model (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Dennis et al., 2016; Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015), the attribute list derived from these eight higher education models may not be exhaustive. As there could be other constructs that have an influence on higher education institution brand loyalty not included within these studies, it may also be the case that the scales used in the study do not cover all factors influencing student perceptions of university brands. Furthermore, as the service, and/or higher education sectors develop over time, it may be necessary to reconsider the constructs in the outer SBL model and associated measurement scales. For example, as factors such as automation and artificial intelligence increasingly impact our world, university market innovativeness or the perceived ability of an institution to prepare graduates for careers of the future may increasingly have a bearing on student perceptions university brands, and could be considered for inclusion in a future study as a *brand evidence* attribute.

The literature suggests that in the current competitive environment, higher education institutions can and do differentiate their brands by applying branding concepts drawn from other industries (Binsardi & Ekwulugo, 2003; Chapleo, 2015; Ivy, 2001; Mazzarol, 1998; Mazzarol & Soutar, 1999). The higher education-specific CBBE models reviewed in this study do not offer any consistent answers about the process of university brand equity creation or the relative importance of university brand attributes and dimensions (Aggarwal Sharma et al., 2013; Bennett & Ali-Choudhury, 2009; Dennis et al., 2016; Goi et al., 2014; Khanna et al., 2014; Mourad et al., 2011; Pinar et al., 2014; Vukasovic, 2015). However, the results of the current exploratory study suggest that the process of brand equity creation is similar in the higher education setting to that of other service industries, and that the adapted Service Brand Loyalty



model (Krystallis & Chrysochou, 2014; Pillossof et al., 2009) can be used to address the gaps identified in the higher education brand literature. This sets a foundation for further research using the model in the higher education context, and for a future, large scale study, to confirm the generalisability of these preliminary findings.

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## APPENDICES

### Appendix A: Comparison of Higher Education Branding Frameworks and Identified Brand Equity Drivers

Author	Bennett & Ali-Choudhury (2009)	Aggarwal Sharma et al. (2013)	Mourad et al. (2011)	Pinar et al. (2014)	Goi et al. (2014)	Vukasovic (2015)	Dennis et al. (2016)	Khanna et al. (2014)
Brand Equity Perspective	Brand identity	Brand image	Brand image	Brand image	Brand identity	Brand image	Multi-perspectival	Brand touchpoints
Stage of Brand Experience	Prospective Students	<b>Covenant</b> <ul style="list-style-type: none"><li>• Learning environment: student support, calibre of faculty</li><li>• Social environment: clubs, societies, sports facilities</li><li>• Graduation prospects and status</li><li>• Mission and vision: modernity, traditionalism, league table positions</li></ul> <b>Quiddity (functional performance)</b> <ul style="list-style-type: none"><li>• Composition of student body</li><li>• Internal brand values: exclusivity / inclusivity</li><li>• Research or teaching focus</li><li>• Faculty qualifications</li><li>• Dropout rates</li><li>• Practicability: fees, location, entry requirements</li></ul> <b>Symbolic &amp; External Representations</b> <ul style="list-style-type: none"><li>• Brand identity: name, logos, taglines</li><li>• Marketing and communications</li><li>• Public image</li></ul> <b>Conative Responses</b> <ul style="list-style-type: none"><li>• Intention to Apply</li><li>• Favourable Word-of-Mouth</li></ul> <b>Cognitive Responses</b> <ul style="list-style-type: none"><li>• Belief that the University is good and respected</li></ul> <b>Affective Responses</b> <ul style="list-style-type: none"><li>• Feelings - being pleased to enrol</li><li>• University is pleasant and appealing</li></ul> <b>Reputational Consequences</b>	<b>Brand Awareness</b> <b>Brand Image</b> <ul style="list-style-type: none"><li>• Brand Quality</li><li>• Placements quality</li><li>• Location</li><li>• Infrastructure</li><li>• Intellectual capital</li><li>• Admissions rigor</li><li>• Pedagogy</li><li>• Industry integration</li><li>• Global recognition</li></ul> <b>Perceived ROI</b> <b>Brand Preference</b> <b>Willingness to Pay a Premium</b> <b>Likelihood of Joining</b>	<b>Brand Awareness</b> <ul style="list-style-type: none"><li>• Word-of-mouth</li><li>• Promotion</li></ul> <b>Brand Image (value contributors)</b> <ul style="list-style-type: none"><li>• Service attributes: price, quality, benefits, after-sales service</li><li>• Provider attributes: quality of staff and their relationship with customer, location, size, history, internationalisation</li></ul> <b>Symbolic attributes:</b> <ul style="list-style-type: none"><li>• Brand personality, positive social image, and positioning</li></ul>	<b>Pre-Admission Touchpoints</b> <ul style="list-style-type: none"><li>• Media influence</li><li>• Alumni &amp; Recommendation</li><li>• Placement opportunities</li><li>• Soft and hard infrastructure</li></ul> <b>Fees &amp; location</b>			

Stage of Brand Experience	Students	<div><div><div><b>Core Dimensions</b><ul style="list-style-type: none"><li>Perceived quality of faculty</li><li>University reputation: employment outcomes, academic standards</li><li>Emotional environment</li><li>Brand loyalty: proud to be a student, a well-known brand</li><li>Brand awareness</li></ul></div><div><b>Supporting Dimensions</b><ul style="list-style-type: none"><li>Library services</li><li>Student living</li><li>Career development: job search and internships</li><li>Physical facilities</li></ul></div></div><div><div><b>Verbal Identity (brand hearsay)</b><ul style="list-style-type: none"><li>Advertising</li><li>Word-of-Mouth</li><li>Public Relations</li><li>Promotional materials</li><li>Distribution channel: agents and representatives</li></ul></div><div><b>Visual Identity (brand evidence)</b><ul style="list-style-type: none"><li>Facilities</li><li>Employee service</li><li>Brand name</li><li>Core product / service</li><li>Price</li><li>Culture</li><li>Employee development</li><li>Systems</li></ul></div></div><div><b>Promotion Activities</b> <b>Brand Experience</b> <b>Service Attributes</b><ul style="list-style-type: none"><li>Perceived quality of service</li><li>Range of courses</li><li>Study method</li><li>Quality management</li></ul> <b>Symbolic Attributes</b><ul style="list-style-type: none"><li>Brand personality</li><li>Social image</li><li>Innovation</li><li>Faculty reputation</li></ul> <b>Financial Attributes</b><ul style="list-style-type: none"><li>Quality-price relationship</li><li>Financial stability</li></ul></div></div> <div><b>Perceived Quality</b> <b>Reputation</b> <b>Brand Image</b></div>						<div><b>During Course Touchpoints</b><ul style="list-style-type: none"><li>Learning resources</li><li>Co-curricular activities (events)</li><li>Industry interface</li><li>Knowledge enhancement</li></ul></div>
	Graduates	<div><b>Brand Meaning</b> <b>Brand Identity</b> <b>Attachment Strength</b> <b>Satisfaction</b> <b>Trust</b> <b>Commitment</b></div>						<div><b>Post-Passing Touchpoints</b><ul style="list-style-type: none"><li>Career growth</li><li>Alumni involvement</li></ul></div>
Other Influences							<div><b>Influencing Touchpoints</b><ul style="list-style-type: none"><li>Innovativeness and resonance: accreditations, alliances, development programs</li><li>Stakeholder perceptions: perceived status, category membership</li></ul></div>	
	Bennett & Ali-Choudhury (2009)	Aggarwal Sharma et al. (2013)	Mourad et al. (2011)	Pinar et al. (2014)	Goi et al. (2014)	Vukasovic (2015)	Dennis et al. (2016)	Khanna et al. (2014)

## Appendix B: Participant Invitation

# WHAT ASPECTS OF YOUR UNIVERSITY BRAND DO YOU VALUE?



**Participate in a survey to help universities understand how they can improve their brand value for students.**


If you are a currently enrolled university student, we are seeking your participation in a brief survey to find out what you perceive to be the most important value-creating aspects of your institution's brand. This study will provide universities with a more complete understanding of customer-based brand equity, will allow them to improve brand strategy and enhance brand loyalty. To read more about the study and participate, please visit: <http://www.universitybrands.com.au>.

**RESEARCH  
STUDY**  
[www.newcastle.edu.au](http://www.newcastle.edu.au)

### *Complaints about this research*

This project has been approved by the University's Human Research Ethics Committee, Approval No. H- [insert the protocol reference number which will be identified in the written acknowledgement of your application]. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email [Human-Ethics@newcastle.edu.au](mailto:Human-Ethics@newcastle.edu.au).

## Appendix C: Participant Information Statement



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Please [login](#) to see additional testing features

Antonia Mocatta / Dr Fred Chao 12/03/2017  
University of Newcastle, Graduate School of Business  
IDC, The University of Newcastle  
University Drive, Newcastle NSW 2308  
Ph.1800 882 121  
[antonia.mocatta@uon.edu.au](mailto:antonia.mocatta@uon.edu.au) / [fred.chao@newcastle.edu.au](mailto:fred.chao@newcastle.edu.au)

**Information Statement for Doctor of Business Administration (DBA) Research Project  
Customer-based conceptualisations of brand in higher education institutions: a brand  
loyalty model**

You are invited to participate in the above-identified research which is being conducted by Dr Fred Chao, Chief Investigator, and Antonia Mocatta, DBA Candidate, from the Graduate School of Business at the University of Newcastle.

The research is part of Antonia Mocatta's studies at the University of Newcastle, supervised by Dr Fred Chao from the Graduate School of Business at the University of Newcastle.

The purpose of the research is to address the gaps in brand literature for the higher education sector by presenting new measurement scales and a model. The study aims to provide a more complete understanding of the customer-based brand equity attributes and dimensions specific to the higher education sector, and the processes by which these are created.

You are eligible to participate in this research if you are currently enrolled student of an Australian university, you are aged 18 years or over, and you have not already provided a response to the survey associated with this research. **Please note** that you are ineligible to participate if you are under 18.

If you agree to participate, you will be asked to complete an online questionnaire in which you will rate various aspects of the brand of the university at which you are enrolled. The questionnaire/survey should take about 10 minutes to complete.

Participation in this research is entirely your choice. Only those people who give their informed consent will be included in the project. Whether or not you decide to participate, your decision will not disadvantage you. If you do decide to participate, you may withdraw from the project at any time prior to submitting your completed survey. Please note that due to the anonymous nature of the survey, you will not be able to withdraw your response after it has been submitted. There are no anticipated risks associated with participating in this research.

By participating in this questionnaire, you will have the opportunity to share your views on which aspects of the university brand are most important from the customer perspective. By contributing to the available brand equity literature for higher education institutions, this may assist your institution and others in enhancing their brand strategy to better align with the experience students are seeking.

The collected data will contribute towards Antonia Mocatta's DBA Dissertation, and may be presented in academic publications or conferences. Non-identifiable data may also be shared with other parties to encourage scientific scrutiny and to contribute to further research and public knowledge, or as required by law. Individual participants will not be named or identified in any reports arising from the project.

You can access a summary of the results of the research by emailing [antonia.mocatta@uon.edu.au](mailto:antonia.mocatta@uon.edu.au).

Please ensure that you have read this Information Statement and understand its contents before you consent to participate. If there is anything you do not understand, or you have questions, please contact the researcher. Completion of the online survey will be taken as your implied consent to participate.

If you would like further information please contact Fred Chao, email: [fred.chao@newcastle.edu.au](mailto:fred.chao@newcastle.edu.au).

Thank you for considering this invitation.


This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2016-0440. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellor, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email [Human-Ethics@newcastle.edu.au](mailto:Human-Ethics@newcastle.edu.au).

If you have read the information statement and would like to participate in the survey, please click next.

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## Appendix D: The Questionnaire




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Please complete the following demographic questions before proceeding to the main survey. This information is being requested so that the research data can be compared to the composition of the broader Australian university student population. Please select one answer for each question.

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8%

**Please select your gender**  
*Please select one only.*


☐ Male

☐ Female

☐ Other

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16%

**Please select your age**  
*Please select one only.*

☐ Under 18

☐ 18-24

☐ 25-34

☐ 35-44

☐ 45-54

☐ 55-64

☐ 65-99

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At Which Australian University Are You Currently Enrolled?

Australian Catholic University

Select one...

Australian Catholic University  
Australian National University  
Bond University  
Carnegie Mellon University - Australia  
Central Queensland University  
Charles Darwin University  
Charles Sturt University  
Curtin University  
Deakin University  
Edith Cowan University  
Federation University  
Flinders University  
Griffith University  
James Cook University  
La Trobe University  
Macquarie University  
Monash University  
Murdoch University  
Queensland University of Technology  
RMIT University  
Southern Cross University  
Swinburne University of Technology  
Torrens University  
University of Adelaide  
University of Canberra  
University of Divinity  
University of Melbourne  
University of New England  
University of New South Wales  
University of Newcastle  
University of Notre Dame  
University of Queensland  
University of South Australia  
University of Southern Queensland  
University of Sydney  
University of Tasmania  
University of Technology Sydney  
University of the Sunshine Coast  
University of Western Australia  
University of Wollongong  
Victoria University  
Western Sydney University

Other

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### Please specify your Level of Study

Please select one only.

- ☐ Undergraduate
- ☐ Postgraduate

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### Please specify your Broad Field of Study

Please select one only.

- ☐ Arts and Social Sciences  
(incorporating Society and Culture, Law, Creative Arts and Education)
- ☐ Management and Commerce
- ☐ Health
- ☐ Engineering, Architecture and Information Technology
- ☐ Natural and Physical Sciences, Agriculture and Environmental Studies
- ☐ Others

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In each of the statements below, "this university" refers to the university at which you are currently studying. Thinking about your university, for each of the statements please select the response that most closely corresponds with your perceptions of the university's brand.

The scale is: 1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neutral, 5=somewhat agree, 6=agree, 7=strongly agree.

Please select one answer per row.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
The brand name of this university tells me a lot about what to expect from this institution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The brand name of this university tells me a lot about this institution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The brand name of this university means something to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The brand name of this university sends a message to me about the institution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The brand name of this university tells me everything I need to know about its service.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This university's courses are reasonably priced.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This university offers value for money.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This university provides a good education for the price.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Studying at this university is economical.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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In each of the statements below, "this university" refers to the university at which you are currently studying. Thinking about your university, for each of the statements please select the response that most closely corresponds with your perceptions of the university's brand.

The scale is: 1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neutral, 5=somewhat agree, 6=agree, 7=strongly agree.

Please select one answer per row.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
<b>When referring to the FACILITIES of a university we mean:</b> <ul style="list-style-type: none"> <li>• The buildings and interior fit-out</li> <li>• Physical and virtual resources including library, computer and science labs, online learning spaces and wireless network</li> <li>• Recreational and sporting amenities including cafes, bars, gym, pool and sports fields</li> </ul>							
This university has up-to-date facilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This university's physical facilities are visually attractive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This university is in a location in keeping with the type of service it provides.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The appearance of this university's physical facilities are in keeping with the type of service provided.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>When referring to the CORE SERVICE of a university we mean:</b> <ul style="list-style-type: none"> <li>• The range of courses offered</li> <li>• Academic standards</li> <li>• Pedagogy / method of teaching / the knowledge enhancement process</li> <li>• Non-academic support services and activities (clubs, societies, sports etc.)</li> <li>• Industry integration</li> <li>• Career prospects on graduation</li> </ul>							
The core service provided by this university suits my needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The core service provided by this university is reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can depend on this university to provide good core service.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This university provides quality core service.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The core service provided by this university is superior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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In each of the statements below, "this university" refers to the university at which you are currently studying. Thinking about your university, for each of the statements please select the response that most closely corresponds with your perceptions of the university's brand.

The scale is: 1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neutral, 5=somewhat agree, 6=agree, 7=strongly agree.

Please select one answer per row.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
I receive prompt attention from the university's employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees of this university are always willing to help me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The employees of this university are never too busy to respond to my requests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can trust the employees of this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees of this university are of a high caliber and have expertise in their respective fields.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees of this university are polite.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employees of this university give me personal attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When attending this university, I feel:							
Annoyed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Happy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frustrated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleased	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disgusted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Uneasy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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In each of the statements below, "this university" refers to the university at which you are currently studying. Thinking about your university, for each of the statements please select the response that most closely corresponds with your perceptions of the university's brand.

The scale is: 1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neutral, 5=somewhat agree, 6=agree, 7=strongly agree.

Please select one answer per row.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
The image of this university is consistent with my own self-image.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attending this university reflects who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People similar to me attend this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The kind of person who typically attends this university is much like me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like the advertising and promotions of this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I react favorably to the advertising and promotions of this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel positive toward the advertising and promotions of this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The advertising and promotions of this university are good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The advertising and promotions of this university do a good job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am happy with the advertising and promotions of this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**NEXT** ➔

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In each of the statements below, "this university" refers to the university at which you are currently studying. Thinking about your university, for each of the statements please select the response that most closely corresponds with your perceptions of the university's brand.

The scale is: 1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neutral, 5=somewhat agree, 6=agree, 7=strongly agree.

Please select one answer per row.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
Publicity about this university has been significant in affecting my views of this institution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Publicity about this university revealed some things I had not considered about this institution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Publicity about this university provided some different ideas regarding this institution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Publicity about this university really helped me formulate my ideas about this institution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Publicity about this university influenced my evaluation of this institution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The opinion of my friends/family has been significant in affecting my views of this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends/family mentioned some things I had not considered about this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends/family provided some different ideas regarding this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends/family really helped me formulate my ideas about this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends/family influenced my evaluation of this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am very satisfied with the education provided by this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This university does a good job of satisfying my needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The education provided by this university is very satisfactory.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that attending this university is usually a very satisfying experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I made the right decision when I decided to attend this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**NEXT** ➤

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In each of the statements below, "this university" refers to the university at which you are currently studying. Thinking about your university, for each of the statements please select the response that most closely corresponds with your perceptions of the university's brand.

The scale is: 1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neutral, 5=somewhat agree, 6=agree, 7=strongly agree.

Please select one answer per row.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
Overall I think this university is very good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall I think this is a nice university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall I think this university is very attractive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall I think this university is desirable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall I think this university is extremely likeable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to complete my degree at this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am likely to recommend this university to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I were to study another time, I would choose this university again.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If it offered the course I wanted to study, this university would be my first choice in future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider myself to be loyal to this university.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**NEXT**
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## Survey Completed - Thank You

Complete  
 You will be redirected in 60 seconds; please [click here](#) to continue now.

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## Appendix E: Indicators and Proposed Groupings to Latent Constructs

<b>Brand Evidence (be)</b>	
<b>Brand Name (bn)</b>	
bn1	The brand name of this university tells me a lot about what to expect from this institution.
bn2	The brand name of this university tells me a lot about this institution.
bn3	The brand name of this university means something to me.
bn4	The brand name of this university sends a message to me about the institution.
bn5	The brand name of this university tells me everything I need to know about its service.
<b>Price / Value for Money (pv)</b>	
pv1	This university's courses are reasonably priced.
pv2	This university offers value for money.
pv3	This university provides a good education for the price.
pv4	Studying at this university is economical.
<b>Servicescape (ss)</b>	
ss1	This university has up-to-date facilities.
ss2	This university's physical facilities are visually attractive.
ss3	This university is in a location in keeping with the type of service it provides.
ss4	The appearance of this university's physical facilities is in keeping with the type of service provided.
<b>Core Service (cs)</b>	
cs1	The core service provided by this university suits my needs.
cs2	The core service provided by this university is reliable.
cs3	I can depend on this university to provide good core service.
cs4	This university provides quality core service.
cs5	The core service provided by this university is superior.
<b>Employee Service (es)</b>	
es1	I receive prompt attention from the university's employees.
es2	Employees of this university are always willing to help me.
es3	The employees of this university are never too busy to respond to my requests.
es4	I can trust the employees of this university.
es5	Employees of this university are of a high calibre and have expertise in their respective fields.
es6	Employees of this university are polite.
es7	Employees of this university give me personal attention.
<b>Feelings (f)</b>	
	When attending this university, I feel:
f1	Annoyed*
f2	Happy
f3	Irritated*
f4	Frustrated*
f5	Pleased
f6	Sad*
f7	Disgusted*
f8	Uneasy*
f9	Good
f10	Nervous*
f11	Confident
f12	Impressed
<b>Self-Image Congruence (sic)</b>	
sic1	The image of this university is consistent with my own self-image.
sic2	Attending this university reflects who I am.
sic3	People similar to me attend this university.
sic4	The kind of person who typically attends this university is much like me.
<b>Brand Hearsay (bh)</b>	
<b>Controlled Communications (cc)</b>	
cc1	I like the advertising and promotions of this university.
cc2	I react favourably to the advertising and promotions of this university.
cc3	I feel positive towards the advertising and promotions of this university.
cc4	The advertising and promotions of this university are good.
cc5	The advertising and promotions of this university do a good job.
cc6	I am happy with the advertising and promotions of this university.
<b>Uncontrolled Communications (uc)</b>	
uc1	Publicity about this university has been significant in affecting my views of this institution.
uc2	Publicity about this university revealed some things I had not considered about this institution.
uc3	Publicity about this university provided some different ideas regarding this institution.
uc4	Publicity about this university really helped me formulate my ideas about this institution.
uc5	Publicity about this university influenced my evaluation of this institution.
uc6	The opinion of my friends/family has been significant in affecting my views of this university.
uc7	My friends/family mentioned some things I had not considered about this university.
uc8	My friends/family provided some different ideas regarding this university.
uc9	My friends/family really helped me formulate my ideas about this university.
uc10	My friends/family influenced my evaluation of this university.
<b>Satisfaction (s)</b>	
s1	I am very satisfied with the education provided by this university.
s2	This university does a good job of satisfying my needs.

s3	The education provided by this university is very satisfactory.
s4	I believe that attending this university is usually a very satisfying experience.
s5	I made the right decision when I decided to attend this university.
<b>Brand Attitude (ba)</b>	
ba1	Overall I think this university is very good.
ba2	Overall I think this is a nice university.
ba3	Overall I think this university is very attractive.
ba4	Overall I think this university is desirable.
ba5	Overall I think this university is extremely likeable.
<b>Brand Loyalty (bl)</b>	
bl1	I intend to complete my degree at this university.
bl2	I am likely to recommend this university to others.
bl3	If I were to study another time, I would choose this university again.
bl4	If it offered the course I wanted to study, this university would be my first choice in future.
bl5	I consider myself to be loyal to this university.

\*indicates reverse scoring